

DOES NOT CIRCULATE

Official Publication of the  
**MEDICAL AND CHIRURGICAL FACULTY  
OF THE STATE OF MARYLAND**

MARYLAND TUBERCULOSIS ASSOCIATION ISSUE



THE UNIVERSITY  
OF MICHIGAN

NOV 9 1960

MEDICAL  
LIBRARY



# Maryland

## STATE MEDICAL JOURNAL

L. 9 NO. 10

NOVEMBER, 1960

**now**  
**Pulvules®**  
**Ilosone®**

... in a more acid-stable form ... for greater therapeutic activity

- more antibiotic available for absorption
- new prescribing convenience
- same unsurpassed safety

**Pulvules • Suspension • Drops**

Ilosone® (propionyl erythromycin ester lauryl sulfate, Lilly)

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.



032630

November is APPOINTMENT WITH HEALTH MONTH  
FOR THE AGING



### EDITORIAL

A NEW ERA in the field of professional liability insurance is anticipated with the adoption by the House of Delegates, at its April 1960 meeting, of an insurance program which has as its objectives:

1. Coverage as broad and comprehensive as possible for members of the Medical and Chirurgical Faculty.
2. Vigorous defense available whenever needed.
3. Prevention, if possible, of any increase in professional liability rates, as well as efforts toward a reduction in cost based upon the *actual loss experience* in Maryland. The combined services of the insuring company and the cooperation of our membership will contribute materially toward such a goal.
4. An opportunity to secure professional liability coverage without completely revising existing insurance arrangements.
5. Issuance of individual policies to each member, thus precluding the possibility of cancellation on an entire group of individuals. This feature does not prevent cancellation of individual policies, but it is provided that such cancellation will be effected only after consultation with the Faculty's Professional Liability Insurance Advisory Committee.

The companies selected to write this type of insurance for Faculty members are the St. Paul Fire and Marine Insurance Company and the St. Paul Mercury Insurance Company, of St. Paul, Minnesota. The companies' local agents will be charged with administering and servicing the individual policies issued to our members.

The St. Paul Companies have been highly selective of the states in which they have entered into this field of insurance, introducing it only where members have shown a high degree of interest and have expressed willingness to cooperate with the companies in an active claims prevention program. They have selected only those states where the program can be adequately serviced, administered, and developed.

We are all aware of the continuing increase in rates for this type of insurance and of the prospect for further increases. While we have been content, heretofore, to accept the situation passively, the time has come to pay particular attention to the problem and to act accordingly. The adoption of such a program of insurance is a start. It has proven successful in the medical societies of Georgia, Minnesota, District of Columbia, Oklahoma, Virginia, and the Carolinas; there is every reason to believe that it should prove equally successful in Maryland.

The success of the professional liability program is of great importance. The number of cases brought annually is increasing. Without an organized program to prevent the so-called racketeering of claims, the earnings and professional reputations of the men and women in medicine will be in jeopardy. It behooves us all to protect our interests by cooperating with the local agents of the St. Paul Companies, who will approach each Faculty member personally to discuss the insurance program with him.

# TUBERCULOSIS IS STILL MARYLAND'S PROBLEM!

Frank T. Jones\*

GOOD HEALTH and prevention of disease are two objectives in which everyone is interested, everyone meaning physicians and citizens alike. The citizen exhibits his interest through active participation in the work of the voluntary health agency, the physician through his daily practice and his dedicated desire to keep abreast of the latest techniques and methods in the treatment and prevention of disease.

During the last decade there have been major advances in the diagnosis and treatment of tuberculosis. We have now reached a point where the experts believe we can approach a state of almost complete eradication if all of us, physicians and citizens, work together to reach that goal.

This special issue of the *Maryland State Medical Journal* is directed toward bringing to Maryland's physicians some of the newer concepts of the diagnosis and treatment of tuberculosis. These are outlined in the first two articles, especially in the Arden House Report on tuberculosis, which should be of vital interest to all physicians.

Tuberculosis still remains a serious problem in Maryland. In Baltimore, it is our Number 1 communicable disease. Baltimore, according to United States Public Health Service reports, has the highest rate of the ten largest cities in the country.† The Maryland State Health Department reports an increase in the number of newly reported cases for the first 13 weeks of 1960 over the same period for 1959. Our position is not an enviable one; but something can be done about it if physicians and citizens work together toward the common goal of eradication, which, according to the Arden House Report on Tuberculosis, is possible within our lifetime.

Statistically, the entire problem of respiratory diseases is growing. The National Tuberculosis Association, seeing a great need for research and public education in respiratory diseases, has extended its activities into this field, although it still considers tuberculosis the primary concern of every voluntary tuberculosis association in the country. For this reason, we have included the articles on anonymous mycobacteria and air pollution in this issue.

The Maryland Tuberculosis Association, its 19 affiliated county associations, and its medical arm, the Maryland Trudeau Society, are grateful to the editors of this Journal and to the members of the Medical and Chirurgical Faculty of Maryland for allowing us to present in this issue a small part of the tuberculosis and respiratory disease picture. We are grateful, too, for the space allotted us each month, which enables us to present in capsule form some of the latest information on these diseases. We are hopeful that through the use of this medium we can bring information to the physician that will be helpful to him.

\*Executive Director, Maryland Tuberculosis Association.

†See Maryland State M.J. 9:8, August 1960, p. 467.



# Hospital Management of Tuberculosis

## A Partial Analysis of the Discharges From the Baltimore VA Hospital In 1959

Patrick B. Storey, M.D.\* and

Jacob R. Jensen, M.D.†

**N**EW APPROACHES to the treatment of tuberculosis, based on the spectacular effectiveness of chemotherapy, have developed since the opening, in 1952, of the Veterans Administration Hospital in Baltimore for the care of tuberculous patients. Many old practices have disappeared from use, including such traditional measures as bed rest, prolonged hospitalization, and collapse therapy. Recent emphasis has been placed upon early rehabilitation, early surgery, and early return to the community, all on the background of prolonged adequate chemotherapy.

As a consequence of such changes in therapeutic possibilities, it is reasonable to expect a considerable change in the character of the patient population of a TB hospital. To see this change, we have reviewed the statistical data on discharges from our hospital during the years of its operation and compared them with those for the calendar year 1959. During this year there were 250 beds designated for the care of patients with tuberculosis.

The material presented here is not a scientific treatise on the management of tuberculosis, but is a partial demonstration of the program going on in one of Baltimore's three modern hospitals for tuberculous patients. The data will, in fact, be tedious reading to any but the institutional phthisiologist (medical and non-medical) and are not subject to anything but the most knowing interpretation by those intimately concerned in the

Data concerning the tuberculosis patients discharged from the Baltimore VA Hospital in 1959 are presented to illustrate certain features of the disease and its management:

1. There is a shift toward an older patient population.
2. There is a marked emphasis on early ambulation and brief hospitalization.
3. There is a striking tendency to discharge patients in the active, sputum negative state.
4. Relapses from the inactive or active, sputum negative state form a small proportion of the patient group.
5. Surgical management is almost entirely restricted to resection, with infrequent use of the standard or plombage thoracoplasty.
6. Patients seldom die from tuberculosis itself, but usually from associated disease.
7. The irregular discharge rate can be kept close to a respectable 20 per cent.

These data emphasize the striking influence of chemotherapy in the management of tuberculosis and lead the authors to speculate on future continued changes in the approach to management, with further development of clinic type programs and intermittent hospitalization, when indicated, in a unit which may be part of a general hospital or chest disease institute.

\*Director of Professional Services.

†Chief of Physical Medicine and Rehabilitation.

TABLE I  
ORIGIN OF PATIENTS

City or State	White	Per cent of all white patients	Negro	Per cent of all Negro patients	Total white & Negro	Per cent
Baltimore	131	42.95	108	48.65	239	45.35
Elsewhere in Maryland	49	16.07	23	10.36	72	13.66
Total Maryland	180	59.02	131	59.05	311	59.01
Washington, D. C.	24	7.87	46	20.72	70	13.28
Philadelphia	30	9.84	31	13.96	61	11.58
Elsewhere in Pennsylvania	41	13.44	5	2.25	46	8.72
Total Pennsylvania	71	23.28	36	16.21	107	20.30
All Other	30	10.00	9	4.00	39	7.6

field. A considerable part of it is of interest only to us in Maryland. A much greater breakdown of the data, together with editorial comment ad lib, is available to anyone interested.

Sixty per cent of the patients discharged in 1959 were from Maryland, 20 per cent from Pennsylvania, and 13 per cent from the District of Columbia. It is probable that a large proportion of tuberculous veterans from the District of Columbia go to the Martinsburg VA Center in Martinsburg, West Virginia, and that the Pennsylvanians go either to Martinsburg or to the Butler VA Hospital for Tuberculosis in Pennsylvania.

TABLE II  
AGE AND RACE OF PATIENTS

Total tuberculosis patients discharged:	527
White patients:	305
Under 50 years of age	179—58.7%
50 years and over	126—41.3%
Negro patients:	222
Under 50 years of age	166—74.8%
50 years and over	56—25.2%

Fifty-eight per cent of the patients were white, and it is of interest that more than 40 per cent of these were 50 years of age or older. In fact, 25 per cent of all patients still hospitalized on the last day of the year were 60 or older. Among the Negro patients, one sees a less rapid shift from the traditional age of dominant incidence of TB.

This tendency toward an older age group is a reflection, in great part, of the influence of chemotherapy and points up the existence of the general problem of the older patient in our tuberculosis hospitals.

TABLE III  
ANNUAL NUMBER OF DISCHARGES WITH TUBERCULOSIS

	1953	1954	1955	1956	1957	1958	1959
Total TB discharges	205	379	419	442	459	505	527
Total MHB discharges	115	255	285	294	315	360	373
Total irregular discharges	69	101	107	114	104	116	104
Irregular discharge rate							
—per cent	37.5	28.3	27.3	27.9	24.7	24.3	21.8

Table III indicates the steadily increasing number of patients moving through our hospital. This increase is related, undoubtedly, to the decrease in duration of hospitalization for each patient.

The average hospital stay for all TB patients discharged MHB (with Maximum Hospital Benefit) in 1959 was 170 days, or 5½ months. The average hospital stay in 1954 was 252 days, or 8½ months. The figure of 5½ months includes all patients discharged MHB, whether minimal, moderately advanced, far-advanced, or extra-pulmonary on admission. It does not include the irregular discharges for whom the average stay

was just over four months. It does not include, nor do any of these data, short term admissions such as three-day followup rechecks or observation and examination cases.

This increased turnover of patients, coupled with a low relapse rate, probably accounts in great part for the increased availability of beds in TB hospitals. Whether or not there is also an actual decline in the incidence of clinical disease, which would seem to be a reasonable expectation as a dividend of improved treatment of existing cases, must be determined from other sources.

For many reasons, the irregular discharge of tuberculous patients does not carry with it the same ominous significance that it did in the past; nevertheless, the problem of the patient who interrupts his treatment is still of considerable significance in the control of tuberculosis in the community. The rate can probably be kept down by the existence of good facilities for solving patients' problems, by the use of proper patient education techniques, and by a dynamic design of the therapeutic program.

The irregular discharge rate shown in Table III is calculated according to the method recommended by both VA and the National Tuberculosis Association, as outlined in the American Review of Tuberculosis and Respiratory Diseases, March 1959, pages 273-283, which method effects a rather severe test of this rate.

TABLE IV

DURATION OF HOSPITAL STAY: 1959

Original treatment cases only: average stay per patient

Minimal pulmonary tuberculosis	
Medical treatment only	100 days
Medical and surgical treatment	80 days
Moderately advanced tuberculosis	
Medical treatment only	167 days
Medical and surgical treatment	194 days
Far advanced tuberculosis	
Medical treatment only	246 days
Medical and surgical treatment	276 days

Table IV shows the length of hospital stay for patients with pulmonary tuberculosis who were undergoing their first course of treatment, the so-called original treatment cases. Presently, the duration of stay is about three months for the minimal case, six months for the moderately ad-

vanced case, and eight months for the patient with far advanced disease. The somewhat longer hospital stay for surgical patients should not be interpreted to mean that surgical treatment takes longer; for had not these patients come to surgery, it is likely that the average length of stay for the medically treated group would have been longer.

TABLE V

TYPES OF TUBERCULOSIS TREATED

1. Pulmonary		
Minimal		66
White	40	
Negro	26	
Moderately advanced		171
White	108	
Negro	63	
Far advanced		277
White	154	
Negro	123	
2. Non-pulmonary		13
Tuberculosis pleurisy with effusion	4	
Genitourinary tuberculosis	4	
Tuberculous lymphadenitis	3	
Miliary tuberculosis	1	
Tuberculous peritonitis	1	
3. Pulmonary with extra pulmonary tuberculosis		30
(This number is included in the pulmonary group)		
White	16	
Negro	14	
Tuberculosis of pleura		16
Tuberculous lymphadenitis		2
Tuberculosis of the pericardium		1
Genitourinary tuberculosis		3
Miliary tuberculosis		1
Tuberculosis of bone		6
Perianal tuberculosis		1

Five hundred twenty-seven patients with tuberculosis were discharged from this hospital in 1959. The types of TB represented in these patients are shown in Table V. Only 12.5 per cent of them were minimal disease on admission to the hospital. More than 85 per cent of patients, therefore, presented with the problems of advanced disease, usually with cavitation. Four per cent of the patients had extrathoracic tuberculosis, with or without pulmonary TB.

In Table VI is shown the breakdown of patients

TABLE VI

## READMISSION PATIENTS

Minimal pulmonary tuberculosis: . . . . .	16
White patients . . . . .	9
Negro patients . . . . .	7
Moderately advanced tuberculosis: . . . . .	37
White patients . . . . .	23
Negro patients . . . . .	14
Far advanced tuberculosis: . . . . .	83
White patients . . . . .	48
Negro patients . . . . .	35

who were not original admissions to the hospital but who had been readmitted because of their tuberculosis. There were 136 readmissions among the 527 patients discharged in 1959. Among the minimal cases there were no relapses. Two of these patients showed continued activity of known active disease; the other 14, on study, were found to be still inactive and were discharged as such.

In the moderately advanced group were seven relapses of previously inactive disease and one relapse of previously active, sputum negative\* disease. Four patients showed worsening of known active disease, and twelve showed continued activity of known active disease but without radiologic or bacteriologic change. Thirteen patients were found to have still inactive disease and were discharged as such. In the far advanced group there were 83 readmissions, of which was one bonafide bacteriologic relapse from a previously inactive status and three relapses (one radiologic, and two both radiologic and bacteriologic) from the active, sputum negative state. Twenty of the readmitted patients revealed worsening of known active disease, and 55 showed continuation of activity of disease but without radiologic or bacteriologic deterioration. Only four patients in this group were evaluated and found inactive.

Strong emphasis must be given to the fact that bonafide relapses from the inactive state form so small a portion of the patient population. This is in striking contrast to the pre-chemotherapy era.

Table VII shows the status of the patients' tuberculosis at the time of discharge. This is not properly an index of therapeutic success, since the

\*The term *active, sputum negative* refers to that large group of patients who do well on treatment, convert their sputum to negative, but who do not close their cavities. Many of these have secured open healing of their cavities.

criterion for selection for the group was that the patient had been discharged one way or another. The table is of interest in that it shows the frequency of the various diagnostic categories in which patients are discharged, and it shows a pronounced tendency toward early discharge. The designation "non-active" is strictly a VA term, referring to the patient who has not shown signs of activity of his disease for three months. When such a state exists for three months more, the NTA Diagnostic Standards allow the diagnosis of inactive. We have found it a great convenience to utilize the designation of "non-active" rather than to discharge the patient still designated as an active case until he waits out his six month period.

TABLE VII

## CLINICAL STATUS AT TIME OF DISCHARGE

Pulmonary tuberculosis patients discharged	514
Minimal tuberculosis . . . . .	66
Discharged as: inactive	36
non-active	28
active, sputum negative	1
active, sputum positive	1
Moderately advanced pulmonary tuberculosis on admission . . . . .	171
Discharged as: inactive	32
non-active	81
active, sputum negative	47
active, sputum positive	11
Far advanced pulmonary tuberculosis on admission . . . . .	277
Discharged as: inactive	14
non-active	68
active, sputum negative	115
active, sputum positive	80

Of the 66 patients with minimal disease, 36 were inactive at time of discharge; 28 had not reached the statutory inactive state but had become non-active; one had not reached the non-active stage, and one left AWOL. These data indicate that patients with minimal tuberculosis are being discharged early, but they also demonstrate that there is room for further efficiency in the use of hospital facilities if we could be sure of the status of the sputum in something less than the usual five to six weeks.

The most striking feature of both the mod-



TABLE VIII  
INCIDENCE OF SURGERY

Minimal Pulmonary Tuberculosis			
Original Treatment	(42 cases)	6 resections	14%
Retreatment	( 8 cases)	1 resection	12%
Moderately Advanced Tuberculosis			
Original Treatment	(108 cases)	33 resections on 32 pts.	30%
Retreatment	( 35 cases)	6 resections	17%
Far Advanced			
Original Treatment	(165 cases)	59 resections	36%
Retreatment	(108 cases)	23 resections	21%

erately advanced and the far advanced groups is the number of patients who are discharged in the active, sputum negative state. These are patients who have secured a good clinical, bacteriologic, and usually good roentgenographic response in terms of clearing of disease shadows, but who do not secure cavity closure. Of 357 patients with advanced disease discharged with negative sputum, fully 45 per cent (162 patients) had persistent cavitation. This is probably, at present, the most important moot point in the therapy of tuberculosis; just how significant is it to have residual cavitation in the presence of persistent (e.g. six months) negativity of the bronchial secretions, and how important is it to secure closure or removal of all cavities?

There were 92 patients in all who were discharged while still sputum positive. Of these, 38 left the hospital against medical advice, 19 died, 12 were transferred to other institutions, and the remaining 23 were discharged to their homes for continued care.

The number of patients in each diagnostic category who required resection as part of their management is shown in Table VIII. Of the entire group, only one patient, who was a far advanced retreatment case, had primary thoracoplasty used as the surgical method of choice. That collapse procedures have been replaced almost entirely by appropriate resection is, of course, the surgical hallmark of the chemotherapy era.

Surgery was employed in 22 per cent of the total of patients discharged. Of patients with moderately or far advanced disease undergoing their first course of treatment, surgery was used in 33 per cent.

Not depicted in these tables, but recently computed at the hospital, is the surgical mortality for the first 1,000 resections. There were no deaths in the segmental resection group, a 2 per cent mortality in the lobectomy group, and 11 per cent mortality in the pneumonectomy cases. Analysis of these deaths is extremely enlightening in illustrating the safety of modern thoracic surgery, since the deaths generally occurred in quite desperate salvage type situations.

One other point not mentioned in these tables, but deserving of inclusion in this report, is the impunity with which one can carry out early resection in selected cases. Of 51 cases so treated, there have been no deaths and no tuberculous infectious complications, thus illustrating the feasibility of early surgery under the protection of effective chemotherapy.

Of the 28 tuberculous patients who died, the cause of death could be attributed directly to the tuberculosis in only five; four of these because of hemoptysis. The other 23 patients more properly may be said to have died with their tuberculosis rather than because of it. Again this is a phenomenon of the chemotherapy era.

#### DISCUSSION

The use of the term *management of tuberculosis* is almost a misuse of terms, since it omits, for the sake of brevity and categorization of topic, the all important reference to the various clinical forms of the disease which, not by virtue of their common bacterial etiology, but because of the greatly variable pathologic changes, occasion striking differences in therapeutic approach and prognosis for cure. This difference in pathologic

TABLE IX  
CAUSES OF DEATH IN TUBERCULOUS PATIENTS—  
28 CASES

Due to tuberculosis .....	5 cases
Hemorrhage .....	4 cases
White, 3 patients (ages 37, 44, and 61)	
Negro, 1 patient (age 39)	
Non-tuberculosis deaths .....	23 cases
White patients, 18 deaths	
Pneumonia 4 deaths (ages 42, 43, 65, and 66)	
Heart disease (coronary, ASHD, cor pulmonale) 8	
Uremia 1 (age 64)	
Cerebro-vascular 1 (age 43)	
Carcinoma 3 (ages 53, 62, 64)	
Postoperative death 1 (age 33)	
Negro patients, 5 deaths	
Pneumonia 1 (age 65)	
Heart disease 3 (ages 35, 66, 70)	
Suppurative pericarditis 1 (age 40)	

development between each case requires careful evaluation of the clinical situation presented and allows an extremely wide range in approach to management. Thus, one patient may be able to continue his work career with practically no interruption; whereas forthwith resection of the involved segment or lobe may be indicated for his neighbor.

Of greatest concern to the patient is the need for hospitalization, the duration of it, the length of time away from work, and the likelihood of cure or, the converse in our medical terms, the incidence of relapse.

Two separate considerations must be viewed in judging the need for hospitalization of tuberculosis patients, one based on diagnostic and therapeutic considerations and the other based on the need to interrupt the propagation of the disease in the population. The latter represents clearcut necessity from the point of view of the public health and requires isolation of the patient until he is no longer capable of transmitting the disease, a matter which, in itself, is apparently much more complicated than it has seemed, but which, for our present purposes, is important in that it dictates at least some duration of hospitalization for most patients with tuberculosis.

From the medical point of view, there are two considerations; first, the diagnostic, which is common to all diseases and requires no further

consideration here, and second, the therapeutic, which concerns us greatly. What does hospitalization itself actually offer in the treatment of the tuberculosis patient? Apart from the public health aspect, it probably offers the same as it does to the management of any chronic disease; e.g. peptic ulcer, valvular heart disease, or nontuberculous lung disease. It serves as a source of refuge when the disease process produces illness and as a center of concentrated care when the more complicated forms of management are in order. This concept strips away the classical ideas of sanatorium care, with varied rest programs and graduated exercise, and the notion of extended rehabilitation, both physical and vocational. Rehabilitation is not in itself necessarily a hospital function but becomes so only when the basic idea of sanatorium care requires that it be an essential part of recovery from hospitalization.

Although the concept of sanatorium care, expressed as recently as 1958 by Dufault in the second edition of his book, has been markedly attenuated in most centers of treatment, it has by no means been discarded. At the Baltimore hospital, we still use a classification system for the patients, depending on the stage of their treatment, and we still employ what is basically hospital management for all TB patients. Bed rest, however, is used for symptomatic treatment only. There are no formal rest hours on a hospital or ward wide basis and no rest therapy prescribed for the asymptomatic patient who is allowed to be up and about to suit his own wishes. The controlled clinical studies carried out during the past five years at the Fitzsimmons Army Hospital have adequately documented the fact that patients with active cavitary tuberculosis who are left to their own devices or given prescribed physical, recreational, and vocational activity do as well as those on prescribed inactivity. Careful scrutiny of patients in the post-hospital followup of their disease has failed to reveal any increased incidence of relapse in patients who have been handled on these active programs. Indeed, common experience at our hospital and elsewhere indicates that the relapse rate for patients treated to the satisfaction of their physicians is quite low. At our hospital, we believe it to be just under five per cent.

Were it not, then, for the public health aspect, the disease in most of its forms might be as well

managed from a clinic as in a hospital, with appropriate intervals of actual hospitalization for specific purposes. For the sputum negative patient, this approach is quite practical and is now in use by many physicians concerned with the management of tuberculosis.

In this light, surgical management takes on a much different role from the prevalent notion of its use only in medical failures. The demonstration that it is practical and safe from the infectious standpoint as a primary form of treat-

ment is important in the coming orientation of the management of tuberculosis to the clinic and the small hospital unit rather than to the sanatorium.

If it should eventually be demonstrated in some conclusive way that sputum positive patients were not in fact infectious for others after a very brief time on isoniazid, we would have the final link in the chain which would close the door on the sanatorium era in the management of tuberculosis.

University of Maryland School of  
Medicine  
Baltimore 1, Maryland

---

ACKNOWLEDGEMENT: To Mrs. Elizabeth B. Carroll for her preparation of the manuscript.

---

### Medical Seminar Cruise

The Duke University Medical School is sponsoring a postgraduate Medical Seminar Cruise to the West Indies this fall aboard the new KUNGS HOLM, Sweden's largest transatlantic liner and cruise ship. The luxury ship, which will sail from New York City on November 9, will visit the Virgin Islands and San Juan, Puerto Rico, and will return to New York on November 18.

Shipboard lectures on various subjects in medicine, pediatrics, and surgery will be given by the following members of the Duke Medical School faculty: Edwin P. Alyea, M.D., professor of urology; Doris Ahlee Howell, M.D., associate professor of pediatrics and pediatric hematologist; Elbert L. Persons, M.D., professor of medicine; William M. Shingleton, M.D., professor of surgery; and William M. Nicholson, M.D., professor of medicine and assistant dean for post-graduate medical education.

The instructional program will provide 20 hours credit toward postgraduate requirements of the American Academy of General Practice. While designed primarily for generalists, the program should be of value and interest to specialists. Informal panel discussions, clinico-pathological conferences, and formal presentations will be given by members of the faculty. We hope that physicians from Maryland will join us on our trip to the West Indies.

W. M. Nicholson, M.D.  
Assistant Dean for Postgraduate Medical Education  
Duke University Medical Center  
Durham, North Carolina

## THE ARDEN HOUSE CONFERENCE

Although the Arden House Conference has been well and thoroughly reported, there still is something of an air of mysticism about it. This is partly because of its rather unique organization, about which you have heard, partly because it was a free-ranging discussion covering the gamut of subjects included in "tuberculosis control," and partly because those privileged to be present will have carried away from it varied and individual interpretations. Its significance will gradually fall into sharper focus; for it was a significant conference, as it was intended to be.

The planning committee for the Conference invited me to be one of its 18 conferees and designated me the official conference reporter. What I shall report to you here will be my impressions, as one individual, as to some of the more significant points which developed and my own brief interpretations of the significance of the Conference's recommendations.

**T**HE ARDEN HOUSE CONFERENCE was designed to review practices in tuberculosis control in the United States, to delete outmoded practices, if any, to indicate new emphases in old techniques, and to point out new directions. With no basically new "tool" in tuberculosis control available or imminent, no dramatic innovations

An address delivered at the 56th Annual Meeting of the Maryland Tuberculosis Association, April 28, 1960, Harundale Mall, Glen Burnie, Md.

\*Director, Tuberculosis Service, Veterans Administration.

William B. Tucker, M.D.\*

were expected. For the innovator, for the daring pioneer, therefore, will be disappointment because little emerged that is radically new. But for the methodical person, the steady worker upon whom depends so much of the success of the movement, there was great encouragement.

Ample measures of progress were demonstrated; and a recognition of what needs to be done, of where to concentrate resources, and of how to proceed came into clearer focus. With this preliminary artist's sketch in hand, skilled staff detailers will no doubt fill in the architect's technical requirements, that we may build a solid structure of complete TB control.

Although a substantial number of physicians were among the conferees, the three-day discussion did *not* concentrate on the details of the practice of medicine. In discussing the results of the Conference with some groups of physicians, some disappointment and misunderstanding in this regard has been expressed. It should be borne in mind that the discussion represented a synthesis of the contributions of the several disparate but related fields concerned; the details in each field were to be left to the "technicians"; the emphasis at the Conference was upon integration, the picture as a whole.

Before turning to the recommendations, permit me to give my individual impressions of the more significant areas of agreement which emerged from the three-day discussion:

1. Eradication (or, if you will, elimination) of tuberculosis in the United States is a perfectly feasible objective *if* no time limit is set for reaching that goal.
2. A remarkable proximity to that objective already has been attained in certain parts of the United States.



3. To an increasing extent, new active cases of tuberculosis arise in individuals who have been infected some time ago rather than in the recent past.
4. The uniformity of the distribution of tuberculosis is less than in the past; it is much less universal and has to a large extent retreated into certain strongholds.
5. In spite of much progress in the treatment of active tuberculosis, the complete supervision of that therapy needs much greater coordination than is ordinarily provided today.
6. A much smaller part of the total treatment of tuberculosis needs to be in a hospital or sanatorium than formerly.
7. Studies in what has been called "secondary prophylaxis"—the treatment of those infected without evidence of demonstrable disease, to prevent "clinical tuberculosis"—has clearly extended the range of the indications for the treatment of tuberculosis disease.
8. Finally, there is sharp recognition that adequate and universal treatment of human tuberculosis serves the dual purpose of controlling the disease in the individual and in the community and the nation.

I shall take up the Conference's recommendations in a different order from that in which they have been numbered, an order generally intended to spell out the entire range of the problem and the program in a logical manner.

*Recommendation No. 8:* Clearly, the best way in which to control tuberculosis would be to prevent it. The Conference recognized that the best available vaccines leave much to be desired in this direction and did not recommend any change from the presently limited use of BCG, although it wished to encourage further search for an improved, even the "ideal," vaccine. Nor was the Conference able to detect any promise in a preventive drug; i.e. in a program of primary prophylaxis, although research in this important field is continuing.

*Recommendation No. 4:* Tuberculosis can be neither controlled nor treated if it is not identified. TB control begins with detection. Programs for detection need more intensive evaluation. More complete diagnosis must follow preliminary detection by any given technique; for with advances in

scientific knowledge, differential diagnosis today is more difficult than ever before. There must be a constant re-evaluation of detection programs at local, state, and national levels.

*Recommendation No. 7:* As in most areas of medicine, increasing reliance in diagnosis must be placed upon adequate laboratory facilities; accurate clinical diagnoses without supporting laboratory data are increasingly rare. The general physician and the internist must have readily available laboratory facilities, especially for tuberculosis bacteriology and for differentiating between tubercle bacilli and related organisms. Other special facilities, such as special x-rays, bronchoscopy, cytology, serology, and special skin tests, will also be required to a much greater extent than is commonly required, if the job is to be properly done.

*Recommendation No. 10:* A better skin test than the Mantoux, which is still the best available, is urgently needed. A more specific test substance, with extremely small positive and negative errors, capable of ready application and interpretation by nonprofessional personnel, should be a top priority requirement. Every member of the Board is strongly urged to read the Supplement to the January 1960 issue of the *American Review*, by Doctors Phyllis and Lydia Edwards, entitled the "Story of the Tuberculin Test from an Epidemiologic Viewpoint," which is simply, briefly, and well written.

*Recommendation No. 5:* It may accurately be said that tuberculosis detection, and therefore tuberculosis control, is no better than its bookkeeping. The Conference recognized many deficiencies in tuberculosis reporting practices and recommended constant evaluation and revision, stressing the urgent need for uniform standards. The pros and cons of over-reporting and under-reporting were discussed, leading to general agreement that some degree of over-reporting is desirable: report the *suspect* as well as the *active* case; report the *inactive* as well. With more adequate substantiating data, the official health agency can then do any winnowing which may be indicated without fear of significant under-reporting. The intriguing possibility was discussed that the time may be rapidly approaching when it will be desirable to report individuals in whom the only evidence of tuberculosis may be a positive tuberculin test.

*Recommendation No. 6:* The Conference was told that 25 per cent of TB deaths are first re-

ported on death certificates, thus accounting for five per cent of all "new cases." This Conference recommendation paid special attention to such error in reporting, suggesting that official health agencies work closely with the medical profession to examine the circumstances in each such reported incident and to strive for improvement, much along the lines that have been so well worked out with maternal deaths. A problem of delicacy with respect to **relationships with the medical profession** is involved; voluntary agencies are in a position to offer their assistance in this area, but not to do the job itself.

*Recommendation No. 11:* The studies of the United States Public Health Service in the isoniazid prophylaxis of infants, in particular, ably reported by Mrs. Shirley Ferebee, attracted a great deal of attention. There was clear recognition that these beautifully planned and executed studies, actually concerned with very early treatment of tuberculosis, should be vigorously supported and extended. With a drug as nontoxic as isoniazid fortunately available, there was acceptance of the idea that therapy for the 95 per cent who may not need it is justified for the benefit derived by the five per cent who do. Studies so far have chiefly been limited to children. By extrapolation, the Conference believed that there would be indications for similar therapy for such other groups as adolescents, young adults in certain categories, and probably all *recent* tuberculin-converters if such recency could be documented.

*The Principal Recommendation.* Appearing first and unnumbered in the list of Conference recommendations is the one which states its objective: *to find and to treat all active cases of tuberculosis* as the principal element in tuberculosis control. Here, embodied in one recommendation, are essentially all features of a tuberculosis control program: detection, therapy, follow-up, and prevention. It is implicit in the recommendation that to be effective an all-out effort will be required, with levels of coordination and supervision seldom attained. As one conferee expressed it, "Total treatment is a *public health* as well as an *individual* control measure."

*Recommendation No. 9:* The Conference clearly recognized and gave specific wording to its belief that "tuberculosis is in part a *sociologic* as well as a *biologic* problem." Deep in their hearts, physicians know this, but too rarely acknowledge it ver-

bally or take any action, perhaps because of the traditions of the practice of medicine. Investigation into the human factors of the tuberculosis problem is urgently needed. What kinds of "hard-to-reach" groups are there? How can the cooperation of different ethnic groups be obtained; how, for that matter, can the cooperation of *any* group or of any individual for prolonged "home treatment" be secured? What sociologic or economic factors influence susceptibility and resistance to tuberculosis? How may irregular, premature discharges from treatment best be controlled or avoided? The list of questions is long, and firm answers are rare. This is a neglected field in TB control.

*Recommendation No. 1:* Reference has already been made to the recognition by the Conference that much better coordination of all aspects of tuberculosis control is needed. With a smaller portion of the total management of the disease concentrated in the hands of the few than formerly; with a wider dissemination of responsibility among private physician, institutional physician, clinic physician, social worker, rehabilitation expert, public health nurse, welfare worker, public health agency, the responsibility for the management of all the problems involved in one patient with tuberculosis today is too widely fragmented and dispersed. Treatment seldom lasts less than two years, but supervision is required for much longer. The tuberculosis population, as is the rest of America's population, is becoming more and more mobile. Obviously a more integrated and coordinated degree of supervision is needed. In effect, the Conference, in making this recommendation, recognized that in an infectious disease such as tuberculosis, the public need supersedes the rights of the individual patient and the individual physician, which is a strong way of saying that some degree of *laissez faire* about this particular health problem must be surrendered for the public good. Tactful education of the public will be required, toward which end voluntary health agencies should be able to help tremendously. Closer liaison with individual physicians will be needed, and voluntary agencies can offer to be their "right hands" in the complex relationships involved. The recommendation stipulates that the ultimate responsibility for this coordination should rest with one official agency which is "medically oriented" for the job. Clearly, this means local

and state health departments and the Public Health Service. Equally obviously, if the job is to be properly done, the staffs of these agencies will need to be greatly strengthened; for many health departments are woefully inadequate for such a responsibility. The NTA has its work cut out if it is to alert the public to the necessity for supporting such a program.

*Recommendation No. 2:* No one at Arden House was so naive as to believe that such degrees of intensification of program could come simply, and they were aware of the varying degrees of intensity of need in different areas. This recommendation, to concentrate resources where they are most needed, is based upon an assumption that we can't do it all, everywhere, equally intensively, at once. This may be unwise if areas of lesser need are neglected; it may be wise from a more realistic, practical view, at least in the beginning stages of intensification of program.

*Recommendation No. 3:* No progress can be made without some measurement of partial achievement toward an ultimate objective. The greater the distance to that objective the greater the need for such yardsticks of progress. Hence, this recommendation that certain "intermediate goals" short of eradication (or elimination) of TB be defined. A committee of the NCTW has offered some practical intermediate goals; the Public Health Service and the NTA staffs undoubtedly will be able to define still more practical and meaningful intermediate goals by which the tuberculosis movement in this country will be able to measure and to report progress toward our ultimate objective, eradication.

mate objective, eradication.

On Tuesday, December 1, at Arden House, according to my notes, after we had just about finished chewing and digesting all of this (and much more), understandable human doubtings were voiced. With respect to these recommendations, my notes say:

*"... reservations were expressed as to the practicability of such proposals. The reservations fell principally into three categories: (a) personnel resources are insufficient, at least in some categories, to carry out a greatly expanded or accelerated program; (b) there is insufficient knowledge for the implementation of certain proposals; and (c) most of what has been proposed is actually already being done."*

The reaction of many of you will be along similar lines; for there is some validity in each reservation. The only answer to them can possibly be to know the problem, know the magnitude of the task, know the direction in which to work, then work like hell to get there! Compared with the problem of tuberculosis control which confronted the NTA when it was organized 56 years ago, the job to be done is infinitely easier. I for one cannot believe that anyone in the PHS or the NTA can be a defeatist today, although a tremendous effort is yet indicated. I happen to believe that the Arden House Conference helped all of us to see our task more clearly. Hard work *can* finish the job.

Veterans Administration Central Office  
Washington 25, D. C.

## USED BOOKS WANTED—all kinds

for

annual book sale

**SMITH COLLEGE CLUB OF BALTIMORE**

PROCEEDS FOR SCHOLARSHIPS

**For Pickup Service Call**

**HOskins 7-6916**

**FICTION**

•

**ART**

•

**MYSTERY**

•

**SCIENCE**

•

**TEXT**

•

**JUVENILE**

•

**RELIGION**

•

**PAPER-BACK**

## Disease in Humans

Pulmonary disease due to anonymous mycobacteria has become an important disease entity. From two to eight per cent of current admissions to chest disease facilities in the south have anonymous mycobacteria isolated from excreta. Many of our bacteriological, pathological, clinical, and epidemiological concepts regarding tuberculosis must be altered if we are to consider anonymous mycobacterial disease as a form of tuberculosis. It is, however, these very differences from true tuberculosis which must be exploited in future investigations.

**D**ISEASE IN MAN due to the anonymous mycobacteria has received little attention until recent years. Isolated reports of such infection in humans, however, date back at least three decades. The awakening of interest is due in part to some appreciation of the extent of such infection in the United States. Current investigations indicate that residents of certain parts of the country have acquired infection with alarming frequency and at an early age; yet only a small percentage exhibit overt disease.

As new knowledge of a complex disease process unfolds, different perspectives necessitate divergent interpretations and opinions, resulting from an inability to see a complete picture. For example, many believe that the epidemiological and clinical features of anonymous mycobacterial disease are sufficiently distinct from true tuberculosis to warrant designation as an entirely separate entity (mycobacteriosis). Other areas wherein general agreement is lacking concern the teleologic pattern

An address delivered at the First Annual Meeting of the Maryland Trudeau Society, April 29, 1960, Baltimore, Maryland.

\*Professor of Internal Medicine, The University of Texas Southwestern Medical School.

— due to

## Anonymous Mycobacteria

Charles LeMaistre, M.D.\*

of these mycobacteria, their mode of transmission to man, the pathogenesis in man, and methods of therapy. For the purposes of this presentation, it does not seem profitable to examine controversial issues in detail. Subsequent remarks will be directed to those aspects of anonymous mycobacterial disease which have interested our particular group in Dallas. In effect, this will weight the contents of my remarks heavily toward the predominant pathogen in our area, the photochromogenic mycobacteria.

Studies of the anonymous mycobacteria indicate the necessity of striking alterations in our bacteriologic concepts previously employed for true tubercle bacilli. For example, no longer may one regard virulence of a particular strain of tubercle bacilli for the guinea pig as an equivalent test of virulence for humans. The mere appearance of color in a culture of mycobacteria now signals the necessity of intense bacteriologic study, whereas formerly it served as an end point for our interest in that particular culture; indeed, we have learned to respect many organisms because of their variation in characteristics from such familiar strains as H<sub>37</sub>Rv.



Dr. Ernest Runyon has furnished a working classification for the anonymous mycobacteria (1). In essence, the bacteria are divided into four groups identified simply as Groups I, II, III, and IV. More popularly, these are referred to respectively as Photochromogens, Skotochromogens, Non-photochromogens and Rapid Growers. The Photochromogens produce cream colored colonies in the dark but turn yellow-orange on exposure to light, even for such a short period as half an hour; the Skotochromogens assume their yellow-orange color in the dark or in the light, while the non-photochromogens remain white or cream colored in the dark or light. The lack of pathogenicity for the guinea pig has been consistent for all four groups, but less consistent results have been obtained in mice. Whereas the Photochromogens, or Group I, routinely cause disseminated disease in mice, strains from Group II do not. Groups III and IV demonstrate variation according to the particular strain employed.

Drug resistance, as measured by *in vitro* tests of susceptibility, has become a fairly consistent finding, although variations are observed in degree of resistance and in individual drug susceptibilities. Lack of susceptibility to isoniazid and para-aminosalicylic acid has been somewhat more frequent than resistance to streptomycin. Other developments in the laboratory have aided in the identification of the anonymous mycobacteria. Konno's niacin test has proved helpful in separating the niacin positive true tubercle bacilli from the anonymous mycobacteria. Morphologic differences in the colonies and in the individual bacilli, although helpful in tentative identification, are not sufficiently distinctive to be used with great confidence.

Thus, the bacteriologic identification of the groups of anonymous mycobacteria is becoming more precise. The outstanding differences from true tubercle bacilli seem to be in lack of virulence for the guinea pig, color which develops in light (or in the dark for the Skotochromogens), the relative lack of drug susceptibility, and the failure to produce niacin. Further studies are underway to define individual strain characteristics within each of these groups. It seems quite likely that certain strains may have more significance in terms of human disease than others.

In a similar vein, some re-orientation of time-honored concepts of tuberculosis pathology is necessary. Kent and Lester called attention to dif-

ferences in histopathology produced by Group I, or Photochromogens (2). Endobronchitis undoubtedly occurs with greater frequency in the Photochromogen cases than would be expected with tuberculosis caused by the mammalian organisms. Moreover, the bronchitis is often non-specific in character with marked areas of inflammation, consisting of polymorphonuclear leucocytes, lymphocytes, and plasma cells. In many instances, the bronchitis has contained evidence of both non-specific inflammatory changes and caseous endobronchitis.

The parenchymal lesions have much the same pathological characteristics as true tuberculosis, but tend to be more acute and more exudative. One feature of particular interest is the extent of pulmonary fibrosis. Fibrosis has been a much more prominent feature of healing in the Photochromogen cases than is usually seen in true tuberculosis.

Clinical characteristics of anonymous mycobacterial disease are also somewhat different from true tuberculosis and, at this particular time, more confusing. One group of patients, whose sputa contain anonymous mycobacteria, do not have detectable pulmonary infection. Many such patients have chronic bronchopulmonary diseases, but all patients in this group are without clinical expression of features directly attributable to the anonymous mycobacteria. The Skotochromogen is most often isolated from this group of patients, but rarely on more than one occasion. A second group have mixed infection with both typical and anonymous mycobacteria in their sputum. Although both of these groups of patients deserve extensive study and consideration, I shall dwell upon a third and more clear-cut group of patients, those with pulmonary infections from which only anonymous mycobacteria have been isolated.

Doctors Christianson and Dewlett have followed 25 patients with demonstrable pulmonary lesions for approximately three years (3). Photochromogens were isolated from 18 and Non-photochromogens from four. The microorganisms have not yet been completely classified in two. No mammalian tubercle bacilli were isolated despite repeated efforts. Caucasian males between 30 and 50 years of age predominated in the group. It is noteworthy that tuberculin hypersensitivity to the usual antigens was not present in a significant proportion of these patients. Approximately one-fourth failed to react to Mantoux tests with both P.P.D. and O.T. upon admission to the hospital. Interestingly,

three of those who reacted initially with a positive test later consistently produced negative results.

Outstanding among the clinical features of disease caused by the Photochromogens is the marked disparity between the mild or absent symptoms and the extensive involvement seen radiographically. More than one-half of the patients studied by Christianson and Dewlett were admitted because of abnormalities detected on a routine chest roentgenogram.

The presence of pre-existing pulmonary damage has been noted in many patients from whom Skotochromogens or Non-photochromogens have been isolated. Such a predisposing lesion may not be a prerequisite for Photochromogen infection. At the present time, the patients with Photochromogen disease have about the same percentage of pre-existing lung damage as do other patients admitted to our chest hospital.

One of the puzzling features of Photochromogen disease has been the lack of correlation between the prompt reversal of infectiousness on chemotherapy and the *in vitro* tests of bacterial susceptibility which have consistently indicated at least partial resistance to one or more antimicrobial agents. Unfortunately, sufficient observations on the natural course of infectiousness without chemotherapy are not available for comparison. That early reversal of infectiousness may be a feature of the natural course in a significant number of untreated patients is suggested, however, by the observation that such reversal has been noted frequently before chemotherapy was begun.

Although no absolute pathognomonic radiographic features of Photochromogen disease have been detected, Christianson and Dewlett have listed certain features which are suggestive of the disease. Among these are a higher percentage of cavitation for the total extent of lung involvement seen, thin-walled cavities surrounded by less dense and more strandlike infiltration than might be expected, less frequent nodularity and more evidence of contiguous rather than endobronchial spread.

The effect of chemotherapy upon the pulmonary lesions has not been dramatic. Although the majority do show progressively favorable but slow roentgenographic change, cavitary lesions are not markedly affected. Moreover, lung tissue resected after protracted and often intense chemotherapy frequently yields culturable microorganisms. The somewhat slower regression of pulmonary lesions

than is usually seen with comparable true tuberculosis, coupled with repeated instances of progressive lung destruction despite chemotherapy, have necessitated an aggressive surgical approach. Early resectional surgery of suitable cavitary lesions has become a prominent feature of our current management of these patients.

In summation of the preceding discussion, certain points seem worthy of emphasis. The predominant disease problem due to anonymous mycobacteria in Texas is Photochromogen in origin (4). White males in their third to fifth decade who do not have an increased incidence of pre-existing lung disease constitute the majority of the cases. The disease is most often characterized by an acute destructive parenchymal process and endobronchitis. Extensive fibrosis is a prominent feature of the healing process. Bacteriologic conversion of the sputum occurs rapidly after chemotherapy, although roentgenographic clearing is much less dramatic. The question of chemotherapeutic effectiveness is difficult to accurately evaluate at this early date; nevertheless, most of the improvement observed would be expected with bed rest and supportive measure alone. Resectional surgery has been utilized to a great extent because of the drug resistant character of the infection and the failure to obtain cavity closure with any consistent frequency.

The epidemiology of anonymous mycobacterial infection and disease is of particular interest in that further differences from true tuberculosis are becoming apparent. Anonymous mycobacteria have been isolated from cultures obtained in almost all parts of the world. Extensive tuberculin testing with antigens derived from anonymous mycobacteria has amply demonstrated that infection with true tubercle bacilli is not the only cause for tuberculin hypersensitivity in man (5, 6). Results from the surveys conducted with these antigens suggest that the highest incidence of infection, as judged by cutaneous hypersensitivity, occurred for the Non-photochromogens in the southeastern United States and for the Photochromogens in the southwest. The ages of greatest risk for acquisition of cutaneous hypersensitivity to the Photochromogen antigen is apparently between seven and 16 years. It seems fairly well established that white males are at greatest risk for disease in the age group 30-50 in the southwest and 40-60 in the southeast. As previously mentioned, the risk for Skotochromogen and Non-photochromogen disease is ap-

parently greater if pre-existing lung disease is present, although this has not yet been demonstrated for Photochromogen disease.

The portal of entry in childhood may be the lymphatic tissue of the oropharynx, particularly the tonsils or adenoids (7). Clinical expression of primary infection often is manifested by enlarged cervical nodes which may drain as scrofula. The adult disease is manifested primarily by pulmonary involvement, although meningitis and reticuloendothelial involvement have been observed without overt pulmonary lesions.

The mode of transmission of infection to man remains an unsettled question. Surveys of the household contacts of patients with either Photochromogen or Non-photochromogen disease have failed to demonstrate an increased risk of infection on the part of these contacts. Family histories have revealed a low incidence of tuberculosis and tuberculosis-like diseases; not a single instance of disease in a spouse has yet been reported. It is apparent from the observations to date that we must relegate man to man transmission to a low order of importance, although more investigation

is needed to establish this with certainty.

In searching for a possible mode of transmission, one finds the studies of Dewlett et al particularly fascinating (6). In a survey of an orphanage in a rural setting in Texas, more than eight per cent of the children reacted to a Photochromogen antigen with 10 mm. or more induration. This was fivefold greater than the reactions to an equivalent strength of old tuberculin. The highest incidence of reactivity occurred between the ages of seven and 16 years in this relatively protected environment. No human sources for origin of the infection have as yet been determined, and studies of the environment for possible sources of the infection are under way. Such studies, wherein the variables are relatively limited by the environment, seem particularly worthwhile.

A high incidence of calcified lesions, presumably due to primary infection, was encountered on chest roentgenograms of the children who reacted to one or more of the numerous antigens used. Almost one-half of the children with calcified primaries reacted only to the anonymous mycobacterial antigens without detectable reaction to either old tuberculin or histoplasmin.

**Heart Association of the Lower  
Eastern Shore presents  
A CONCISE CARDIAC REVIEW**

**SUBJECTS:**

Congestive Heart Failure

Leonard Scherlis, M.D.

Cardiac Emergencies

Henry J. L. Marriott, M.D.

Rehabilitation of the Cardiac

Aubrey Richardson, M.D.

Panel Discussion

Anti-Coagulant Therapy

General Question and Answer

Period

**PURPOSE:**

To review present status of home diagnosis and treatment of particular heart ailments as concerning to general practitioners.

**SATURDAY AFTERNOON AND EVENING  
NOVEMBER 5, 1960**

**JOHNNY'S AND SAMMY'S  
SALISBURY, MARYLAND**

*Bring Your Wife for Cocktails and Dinner*

**Fee: \$5.00 per person**

**ADVANCE RESERVATIONS MAY BE MADE:**

Heart Association of the Lower Eastern Shore  
1523 Edgemore Avenue  
Salisbury, Maryland

**REFERENCES**

1. Runyon, E. H.: *The Anonymous Mycobacteria in Human Disease*, Springfield, Ill., Charles C. Thomas, 1960, p. 3.
2. Kent, G. and Lester, W.: Histopathology of Human Pulmonary Disease Produced by Photochromogenic Mycobacteria. 18th V. A. Armed Forces Conference on Chemotherapy of Tuberculosis, St. Louis, Mo., 1959.
3. Christianson, L. and Dewlett, H. J.: *Am. J. Med.* (in press).
4. Jenkins, D. E.: Pulmonary Disease Due to Atypical Mycobacteria: Current Concepts. 19th V. A. Armed Forces Conference on Chemotherapy of Tuberculosis, Cincinnati, Ohio, 1960.
5. Edwards, L. B., Edwards, P. Q. and Palmer, C. E.: *Acta tuberc. scandinav.*, 1959 (Supplement No. 47).
6. Dewlett, H. J. et al.: A Study of Reactions to Various Anonymous Mycobacterial Antigens in Dallas County Orphans. (Abs) Annual Meeting National Tuberculosis Association, Los Angeles, Calif., 1960.
7. Chapman, J. S. and Guy, L. Ruth: *Pediatrics*, 23:323, 1959.

# Air Pollution And Health

The continual pollution of our natural environment by the waste products of industry and our own luxury living has reached a dangerous point. It is not original to point out that we are creating new disease entities. In addition, the absence of adequate control may render our accustomed dwelling places unsuitable for normal healthy life.

This article will attempt to summarize that knowledge of air pollution and health which seems to have some foundation of scientific proof. The author has borrowed liberally from the Proceedings of the First National Conference on Air Pollution, Washington, D. C., November 1958, as well as from congressional hearings and other articles.

William Sidney Spicer, Jr., M.D.\*

**T**O THOROUGHLY UNDERSTAND the pathogenesis of diseases produced by air pollution, one must first familiarize himself with a few basic facts about meteorology. First, on a bright day with the wind blowing gently, the air of great cities normally is cleared of its industrial gases and particulate waste by updrafts of air, which dilute them and blow them away. The particulate matter eventually settles over wide areas; the gases are diluted infinitely and washed out by rain.

Second, great masses of air move around the earth in a somewhat erratic fashion, which movement in any one area is a function of the barometric pressures, high, medium, or low, in that area. Occasionally mass air motion in any one area may stop for hours or even days.

Third, at night in some areas, particularly temperate zone river valleys, the temperature of the upper air frequently becomes warmer than the temperature on the surface of the ground. This is called a thermal inversion. Depending on the temperature differential, the height of the warm air, and the density of the warmer layer, it acts as a lid preventing airborne waste from being dis-

sipated in the usual manner. Waste then begins to accumulate. The smog banks seen at dawn or dusk over nearly any great city are concentrations of airborne waste plus droplets of water held down on the city by a thermal inversion. If this static condition lasts long enough and enough waste accumulates, it may become acutely toxic.

Wind and topography are important factors. Wind direction will determine the flow of pollution; however, the wind varies markedly with height, and one must be sure of the wind proximity at the level at which individuals might be affected. Ventilation is proportional to wind speed; however, aerodynamic downwash occurs most characteristically at wind speeds of 15-20 miles per hour and especially near large electric generating power stations. Contaminants may be carried to the ground by this downwash. Finally, wind speed produces turbulence of two types: thermal turbulence caused by considerable vertical mixing and mechanical turbulence activated by the stirring of the air as it passes over obstacles causing little vertical mixing.

Topography operates in two ways in relation to meteorology: it may provide a physical barrier to horizontal diffusion; or a large body of water may complicate horizontal diffusion with breezes from

\*Special Research Fellow, National Heart Institute, Section for Pulmonary Diseases, University of Maryland School of Medicine.



the water related to temperature, day and night, etc.

The earliest written record of death from air pollution appears in the writings of Pliny the Younger (first century A.D.). His uncle, Pliny the Elder, went by ship to see what was happening as the result of the eruption of Mt. Vesuvius in 79 A.D. The old gentleman had suffered from chronic bronchitis or more extensive chronic pulmonary disease before the trip. Nearing the site, he was overcome by "sulfurous fumes" and died on the third day after his collapse. The author also relates that many victims in the Pompeii holocaust were "suffocated by the sulfurous fumes."

Complaints about foul air, arising from man's effort to live a communal life and develop industry, seem to have begun in earnest in England upon the discovery and early mining of Sea Coale (coal) in 852 A.D. Certainly, mining was a regular operation by 1180 A.D. A Royal Proclamation by Edward I in 1306 and another in Queen Elizabeth's reign, about 1570, prohibited the use of sea coal in fireplaces in London. Apparently no one paid much attention to these monarchs' in this regard. Much of London's smoke problem then, as now, was a nuisance problem; yet a hint of illness attributed to fumes appears as early as 1661. The author, John Evelyn, who seems to have composed the first book ever written on air pollution, attributed certain chronic disorders of the respiratory tract, particularly the lung, to the inhalation of coal smoke. He writes as follows:

*And what is all this, but the Hellish and dismal cloud of Sea Coal? which is not only perpetually imminent over her (London's) head but so universally mixed with the otherwise wholesome and Excellent Aer, that her inhabitants breathe nothing but impure and thick Mist, accompanied with fuliginous and filthy vapour, which renders them obnoxious to a thousand inconveniences, corrupting the Lungs and disordering the entire habit of their bodies; so that Catarrhs and Phthisicks, Cough and Consumption, rage more in this one City, than in the whole Earth besides.*

For the most part, while man has complained bitterly about air pollution and attributed all manner of dire ills to it, real proof of illness of the general population caused by polluted air was lacking until recent years. The nuisance problem and

the economic loss inherent in air pollution have been well documented for more than a century.

During the first week in December, 1930, all of Belgium was blanketed by fog. This was most marked in the Valley of the Meuse, where in it also was a thermal inversion. In a 15 mile area of this valley were many factories, including coke ovens, blast furnaces, steel mills, zinc mills, glass mills, power plants, and a fertilizer and sulfuric acid plant. All of the homes in this area were heated by coal; the steamships on the river were powered by coal, as were the freight trains. Trucks were not numerous then. Beginning on the third day of this abnormal weather, with static air and no updrafts, people became ill with respiratory disorders. About 6,000 people became ill, and perhaps 60 died in the next two days. When rain came and the fog disappeared, the epidemic stopped instantly and no new cases appeared. During the last week of October, 1948, static air, anticyclonic conditions, and thermal inversion occurred over most of the eastern half of the United States. This was particularly acute in the upper Ohio River and lower Allegheny and Monongahela River Valleys, which area is full of heavy industry. In Donora, Pennsylvania, situated on the Monongahela River, another factor exists. The city lies on a U-shaped river bend and is surrounded by high stone hills rising to 1,000 feet on four sides, whereas its neighbors have them only on two sides. Like the Meuse Valley, there are blast furnaces, steel mills, zinc mills, sulfuric acid mills, and slag processing mills in Donora. Donora has dense smog every morning, which normally is gone by 10 A.M. or, at the latest, by noon. By the third day people became ill, 5,910 of them, and 18 or 20 died. Rain fell on the Sunday after Halloween, and, as with the Meuse Valley occurrence, the epidemic stopped immediately.

In the week of December 5-9, 1952, a large part of the British Isles was enveloped by dense fog caused by anticyclonic conditions and a thermal inversion. The broad Thames Valley and especially London were severely involved in this weather abnormality. Much illness and a significant rise in the death rate occurred, which was not fully recognized until after the fact. This is by no means the first severe episode in London, but it is the most fully documented. Illness began within 12 hours after the onset of dense fog. It was

respiratory in character, as were the other two reported above. There are no exact figures on morbidity, but the mortality statistics reveal about 4,000 deaths in excess of the expected number in London for that week. It is evident that the mortality rate was much higher in the London episode than in the previous two episodes. If it were not, extrapolating from Donora's experience, there would have been about one million persons ill in that week, a situation which could not have escaped wide public recognition. A large animal show was going on in London, where it was noted that sheep and pigs had no difficulty. Cattle suffered severely, many dying or having to be killed, primarily the most highly bred ones. Chickens and household birds had difficulty in the two previous episodes.

The nature of the disease process in all three episodes was similar: the onset was abrupt in well people, while symptoms increased in the chronically ill suddenly and without apparent cause. There was burning of the eyes, nose, and throat followed by cough, shortness of breath, constriction, and burning in the chest, wheezing respirations, often nausea and vomiting, and, in the severely ill, collapse and cyanosis. These epidemics were not identical. In London, age specific mortality rates differed by a wide margin from those in the other two areas. The list of possible air contaminants in each of the three areas contains materials not found or not likely, quantitatively and qualitatively, in the other two.

Anyone familiar with Los Angeles knows that early morning fog, clearing by 10 A.M., has been present for many years. This fog is probably caused by the cool, moist ocean air moving into the foothills, which rings the Los Angeles basin in the evenings displacing the warm air upward. (Fog is static air full of droplets of water, each of which contains one or more dust particles.) As the temperature drops, the amount of water vapor phase decreases, and droplets will form if dust particles are present. Since the middle 1940's, an increasing amount of smog (smoke-fog) has been present in this basin, which is sufficient to irritate the eyes and considerably upset the dispositions of the people of this area. In addition, vegetation is destroyed, rubber rots, hose disintegrates, and paint becomes discolored.

The three major occurrences reported would

seem to support the contention that acute human health problems may arise from air pollution. Certain facts are clear, which apply to all three episodes:

1. There were anticyclonic weather conditions.
2. There was thermal inversion.
3. There was dense fog.
4. The thermal-lid on each valley was incomplete and did not hold all aerial waste in the valley.
5. There were vast quantities of particulate matter, mostly carbon and iron dusts, in the air.
6. There were vast quantities of gases of various kinds, mostly oxides of carbon, sulfur, and nitrogen, in the air.
7. The particulate matter in the air absorbed a good deal of acid gas material on its surfaces.
8. The concentration of no known single chemical substance reached presently recognized lethal levels.
9. The toxicity of mixtures of dust and gases in non-lethal or even non-toxic concentrations is unknown.
10. No single cause of morbidity or mortality was found.

There are a few other major episodes on record involving predominantly plant products.

Air pollutants fall into two general categories:

- I. Those substances which arise directly from industrial, commercial, domestic, transport, or agricultural activity;
- II. Those pollutants which do not come ready-formed, but instead are products of interaction among primary pollutants under the influence of natural forces in the atmosphere.

Under the first category we must consider the following:

- A. Inert particles: smoke, fly ash;
- B. Chemicals: oxides of nitrogen, organic vapors, hydrocarbons, aldehydes;
- C. Strong acids and alkalis: sulfuric acid;
- D. Allergens: pollens (It should be noted, however, that sampling has shown a higher concentration of amino nitrogen than can be accounted for as pollens);
- E. Radioactive particles\*;
- F. Viable pathogenic microorganisms\*;
- G. Cumulative poisons: lead, beryllium;
- H. Systemic poisons: carbon monoxide, H<sub>2</sub>S.

We have some knowledge concerning the effects of some of these directly acting agents.

\*These are usually excluded in most definitions.

NO<sub>2</sub>, like nitric acid fumes, is highly toxic. In high concentrations it can promptly cause bronchiolitis obliterans, acute airway obstruction, and death; in lesser concentrations it can cause "silo-filler's disease," which has sometimes been the precursor of one form of chronic pulmonary insufficiency. Even in low concentrations, NO<sub>2</sub> is potentially toxic.

SO<sub>2</sub> in human beings can cause increased airway resistance, decreased diffusion of oxygen, thrombosis of small blood vessels, and stimulation of cellular activity. In laboratory animals, the effect varies with concentration: *low* concentration thickens the mucous blanket, *medium* concentration causes temporary ciliary paralysis, and *high* concentration causes epithelial denudation and may be lethal.

In addition, there have been at least two outbreaks of asthmatic attacks among adults without previous history or present evidence of allergy. Both of these, one among Army personnel in Japan in 1946 and the other in New Orleans in 1958, resembled acute attacks of bronchitis, but occurred during periods of low wind and high air pollution (particularly SO<sub>2</sub>). In experiments with human volunteers using SO<sub>2</sub>, two experimenters became sensitive to SO<sub>2</sub> and developed a persistent bronchitis with wheezing when exposed to this agent.

We have less knowledge on the effect of exposure to low concentrations of air pollution or chronic effects on health, although studies are underway in this area. What knowledge we have stems predominantly from epidemiological surveys and concerns chronic bronchitis in Great Britain and Los Angeles and bronchogenic carcinoma. In Los Angeles, it has been demonstrated that individuals improve when taken away from "polluted" air and placed in a room with "cleaner" air (activated charcoal filters).

If the death rates from bronchitis are compared between city and country areas in Britain, it is found that the incidence, for both males and females, is twice as high in cities as in rural areas. A similar comparison in the United States shows that the deaths from chronic bronchitis in cities are only 12 per cent higher for males (and insignificantly different for females) than the corresponding rates in rural areas.

At the present time, a study of the day to day variation in the clinical and physiological status of

a large group of patients with chronic bronchitis is underway in Baltimore. Data from air sampling stations and weather information are being correlated with the condition of the patients.

In summary, while we are well aware of acute episodes particularly related to heavy exposure; i.e., corrosive fumes, and of the effects of chronic exposure; i.e., silica, we have only epidemiological evidence suggestive of a higher incidence of chronic lung disease in polluted areas.

In the second category of air pollutants, the secondary products which have as their sources a reaction system involving organic vapors (hydrocarbons—olefins) and oxides of nitrogen energized by sunlight are much less understood. One of the more important of these products may be ozone. The known effects of ozone (O<sub>3</sub>) are pulmonary edema (later fibrosis), stimulation of cellular healing, increased resistance to further exposure, decreased resistance to infections, depletion of alkaline phosphatase and reaction with various proteins to form antigens.

It is not difficult to understand our present state of relative ignorance. Numerous air pollutants are present at concentrations well below those shown to be toxic to animals. We are well aware that the air we breathe has literally hundreds of byproducts resulting from chemical and photochemical reactions which are continuing in our environment. Even when given a toxic substance in the atmosphere, its course to the bronchiolar epithelium is dependent on many variants; i.e., weather conditions, coalescence, and concentration on a carrier particle permitting a high concentration at one point in the lung. Regardless of this confusion, we know that the level of toxic action in the respiratory tree can explain the resultant clinical effect.

In principle, irritation of the major and medium airways results in reversible bronchospasm, which is commonly called asthma. Irritation of respiratory bronchioles, internal diameter 0.016 inches, more likely causes a more severe obstructive defect; although it may reverse as well. Damage at this level may lead to fibrosis and scarring. Irritation of the respiratory surfaces may occur and in its milder forms causes exudation, while more severe damage results in hemorrhage and inundation. Thus, either superficial nasopharyngeal irritation, asthma-like episodes, bronchitis, and/or an alveolo-capillary block picture



*attains  
sustains  
retains*

*extra  
antibiotic  
activity*

# DECL

*attains activity  
levels promptly*

DECLOMYCIN Demethylchlortetracycline attains—usually within two hours—blood levels more than adequate to suppress susceptible pathogens—on daily dosages substantially lower than those required to elicit antibiotic activity of comparable intensity with other tetracyclines. The average, effective, adult daily dose of other tetracyclines is 1 Gm. With DECLOMYCIN, it is only 600 mg.

*sustains activity  
levels evenly*

DECLOMYCIN Demethylchlortetracycline sustains activity levels through the entire therapeutic course, the high activity levels needed to control the primary infection. A to check secondary infection at the original—or is be another—site. This combined action is usually stage tained without the pronounced hour-to-hour, dose—the s dose, peak-and-valley fluctuations which charage terize other tetracyclines.

TETRACYCLINE  
ACTIVITY  
WITH  
DECLOMYCIN  
THERAPY

DOSE  
350 mg q.i.d.

TETRACYCLINE  
ACTIVITY  
WITH OTHER  
TETRACYCLINE  
THERAPY

DOSE  
250 mg q.i.d.

DECLOMYCIN—SUSTAINED ACTIVITY LEVELS

OTHER TETRACYCLINES—PEAKS AND VALLEYS

POSITIVE ANTIBACTERIAL ACTION

PROTECTION AGAINST PROBLEM PATHOGENS



# DECLOMYCIN<sup>®</sup>

DEMETHYLCHLORTETRACYCLINE LEDERLE

*retains activity  
levels 24-48 hrs.*

DECLOMYCIN Demethylchlortetracycline retains activity levels up to 48 hours after the last dose is given. At least a full, extra day of positive action may be confidently expected. The average, daily adult dosage for the average infection—1 capsule q.i.d.—is the same as with other tetracyclines...but **total** dosage is lower and duration of action is longer.

**CAPSULES**, 150 mg., bottles of 16 and 100. **Dosage:** Average infections—1 capsule four times daily. Severe infections—Initial dose of 2 capsules, then 1 capsule every six hours.

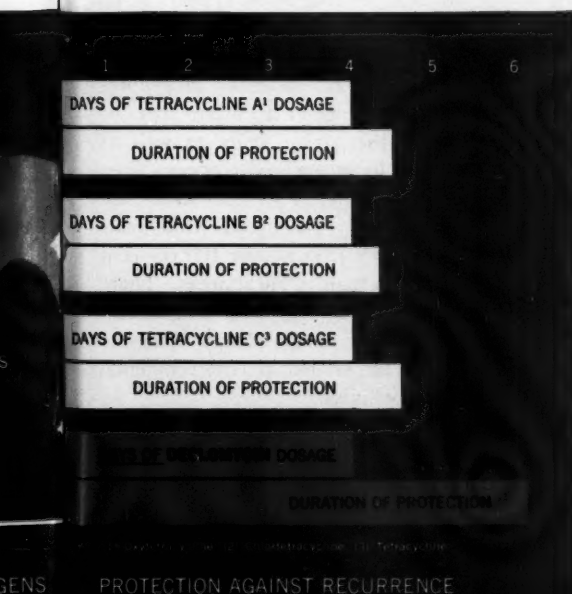
**PEDIATRIC DROPS**, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper. **Dosage:** 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into 4 doses.

**SYRUP**, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz. **Dosage:** 3 to 6 mg. per pound body weight per day—divided into 4 doses.

**PRECAUTIONS**—As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under constant observation.

**LEDERLE LABORATORIES**  
A Division of  
**AMERICAN CYANAMID COMPANY**  
Pearl River, New York



can develop. I believe it is reasonable to say that all of these forms have been documented by physiological testing or post mortem examination following an acute insult.

The effect of particulate material is fairly direct and well understood. It will pass into the lung in indirect proportion to its size. If it reaches a small enough bronchiole, it may be removed by phagocytosis and is likely to cause disease only after long-term exposure.

DuBois and Dautrebande have shown that aerosols of small, inert particulate matter can triple airway resistance, which could mean severe dyspnea for a person who already has increased resistance. Gases offer a different type of problem. The more soluble gases do not penetrate the lung deeply. The less soluble irritant gases are the ones which produce irritation of the deep lungs. There is evidence that there may be synergism between particulate matter and irritant gases. If the gases are dissolved in, or adsorbed on, particulates, they may be carried past the normal upper respiratory protective mechanisms and brought to the deeper portions of the lung. Potentiation might arise by the production of a more intense local tissue dose at the point where the particle lands than would occur by normal absorption. Finally, Dr. Amdur, at Harvard, has shown that the presence of fine sodium chloride particles, in themselves innocuous, intensified the physiological effect (increase in airway resistance) of the irritant gas, sulfur dioxide, by a factor of 30 times.

In addition to inflammatory effects on the respiratory tract, there is some evidence of a carcinogenic effect of air pollution.

1. Carcinogenic aromatic polycyclic hydrocarbons have been demonstrated and quantitated in polluted atmospheres of urban communities. Compounds identified included 3, 4-benzpyrene and more recently, 3, 4-benzfluoranthrene. These agents have been used to produce skin cancers and subcutaneous sarcomas in C57 Black and Strain A Mice by painting and injection.

2. Carcinogenic properties have been demonstrated in fractions of the atmosphere that are free of aromatic polycyclic hydrocarbons. Compounds belonging to the group of oxidation reaction products of aliphatic hydrocarbons have been used to produce skin cancers when painted on C57 Black and Strain A Mice.

3. Ozonized gasoline has been used in inhala-

tion chambers for the production of lung tumors in Strain A and C57 Black Mice. These tumors, while differing structurally from human tumors, are, nevertheless, unequivocally new growths. Their more indolent natural history in mice may well be a reflection of host resistance factors rather than an indication of lack of carcinogenic potency in the aerosols inhaled.

4. Carcinogenic materials have been identified in the air in a particular state that permits their being breathed and deposited on the lining of the lung. Many of these cancer-producing agents are chemically stable and, as such, survive sufficiently long after emission from pollution sources to be potential biological threats.

5. Atmospheric irritants of all types; for example, aldehydes and organic acids, though in themselves non-carcinogenic, may play a role in the development of cancer by interfering with the normal flow of the mucous stream that permanently resides on the lining cells of the lung. It is that continual flow of mucous which normally serves to prevent the accumulation of deposited material on the respiratory epithelium. Irritants can reduce the activity of cilia so that stasis occurs and particle accumulation can follow.

6. Protein materials, normally present in blood and in cells, are capable of freeing cancer-producing chemicals from the particles on which they are carried so that biological activity on their part can result.

The evidence of an "urban" factor for lung cancer, as distinct from smoking patterns or questions of classifications or diagnosis, appears to be secure. This excess in urban areas for lung cancer increases by size of city, when smoking patterns are held constant, and varies by geographical areas. A color difference in the urban areas of the non-white over the native white as well as total white males for lung cancer also occurs, even though the smoking patterns of the white are much greater; and finally, the native white male mortality rate for lung cancer is over 100 per cent greater in urban areas than in rural areas. There is also evidence that the foreign born lung cancer rate of immigrants from England and Wales to New Zealand may be related to environmental factors such as air pollution.

On the other hand, the sex difference on an urban-rural basis would indicate that if atmospheric pollution is involved, it is not affecting

both sexes equally or that some other factors in addition to air pollution are operated to contribute to the male excess for lung cancer. Other factors associated with lung cancer are low socio-economic status and foreign birth.

Investigation of this multi-faceted problem has barely commenced. This brief review has been presented in an effort to provide the interested observer with sufficient information to follow the developments in this field. While it is true that much of the evidence accumulated about noxious substances has universal application, it would be foolhardy at the present time to attempt to do so. We have not identified all of the noxious substances; we know nothing about the concentra-

tions necessary for disease; and the task of evaluating this is tremendous when one considers the various combinations; i.e., weather, particulate matter, estimation of substances, which must be taken into account. Thus, the final point that should be made is that each locality has individual problems which should be worked out on an individual basis rather than unquestioningly accepting experience from many areas. Of course, each locale can benefit from the scientific data from other areas in investigating its own particular circumstance.

University of Maryland School  
of Medicine  
Baltimore 1, Maryland

## AMERICAN COLLEGE OF GASTROENTEROLOGY

The twenty-fifth annual convention will be held October 24, 25, and 26, 1960, at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania. For copies of the program and information concerning the postgraduate course which follows the convention, please write to the American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

## NEW CLINICAL CENTER STUDIES ON COLON AND RECTAL CARCINOMA

The cooperation of physicians is requested in studies on colon and rectal carcinoma recently initiated at the Clinical Center, National Institutes of Health, Bethesda, Maryland. Encouraging results in the treatment of gastrointestinal carcinoma have been reported using the pyrimidine analogues 5-fluorouracil and 5-fluorodeoxyuridine. However, other reports have raised the question of their effectiveness.

The Chemotherapy Service of the National Cancer Institute is conducting studies of these agents in carcinoma of the colon and rectum in order to better define their place in the treatment of metastatic gastrointestinal neoplasm. The side effects of these agents may be considerable, so patients must be in good general condition in order to tolerate adequate doses. Also the presence of tumor masses which can be either measured directly or demonstrated on roentgen films is necessary in order to determine the antitumor effect of the drugs in short trial periods.

Patients can be accepted for these studies if they are ambulatory, have normal leukocyte count, renal and hepatic function, and if they have metastases in the lung, peripheral lymph nodes (such as supraclavicular or cervical), or skin.

Referrals of such patients will be greatly appreciated. Physicians who wish to have their patients considered for study at the National Cancer Institute may write or call:

Clyde O. Brindley, M.D.  
or  
Paul P. Carbone, M.D.  
National Cancer Institute  
Bethesda 14, Maryland  
(OLiver 6-4000, Ext. 4251)

# Pleurisy

## with Effusion and

## Tuberculosis

Patrick B. Storey, M.D.\*

**W**HEN A PATIENT presents with pleural effusion as his clinical problem and without roentgenographic evidence of parenchymal lung disease, there is a strong probability that the cause of the effusion will not be demonstrated in terms of bacteriologic recovery from either the pleural fluid or the bronchial secretions.

A pleural effusion may accompany almost any parenchymal disease of the lung, whether caused directly by extension of the disease process itself to the pleural surface (e.g. tuberculosis, carcinoma, pneumonia) or in a secondary way by complicating infection or congestion (e.g. sarcoidosis, silicosis, carcinoma). Such secondary effusions occasion difficulty in clinical management, because it is not always apparent to the attending physician that there is underlying lung disease since the effusion itself may obscure parenchymal detail on the x-ray.

Granted failure to demonstrate parenchymal disease by any indirect means, what should one think of the apparently isolated clinical phenomenon of a pleural effusion? Much of the recent work on pleural effusion has been concerned with two considerations of this problem, the first having to do with the likely cause of any given effusion and the second with the procedure entailed in diagnostic management.

It now seems well documented, on the basis of follow-up studies, that "idiopathic" or "primary" pleural effusions are frequently an early manifestation of tuberculosis and precede the appear-

ance of other forms of the disease. Part of this documentation is shown in Table I, compiled by Falk (1) to show the incidence of subsequent appearance of tuberculosis in various series of patients with idiopathic pleural effusion recorded in the literature.

The most detailed study of the association between pleurisy with effusion and tuberculosis is that of Roper and Waring (2) from which Tables II and III are taken to illustrate this salient point of their work. They were able to follow for ten years a group of military personnel whose only clinical problem was "idiopathic" pleural effusion. They did not include patients with any evidence of parenchymal lung disease.

Table II shows the eventual incidence of tuberculosis in their total study group of 141 patients. It also shows the effect on outcome of dividing the patients into younger and older age groups. These data are impressive, but not quite so startling as those presented in Table III, showing the patients divided into two groups according to duration of hospital stay.

Of the 141 patients in Roper and Waring's study group 65 per cent subsequently showed evidence of relapse with tuberculosis. Of the 73 patients who were younger than 25 years when they developed the effusion, 75 per cent subsequently demonstrated tuberculosis. As shown in Table III, 123 patients did not develop manifest tuberculosis during the first eight months of observation. These were divided into two groups dependent upon whether or not they had received six months of sanatorium care. The 66 patients

\*Associate Professor of Medicine, University of Maryland School of Medicine.



TABLE I

Incidence of Pulmonary Tuberculosis Following Idiopathic Pleural Effusion						
Author	Year	No. Cases	No.	Per Cent	Observation Years	Deaths Per Cent
Gaarde .....	1930	126	50	40	1-26	—
Schuman .....	1941	94	38	40	5	—
Danilla .....	1942	40	9	23	5	—
Farber* .....	1943	111	38	34	5	71
Jones and Dooley	1946	99	16	16	2	20
			23	12	1	
Thompson .....	1946	190	47	25	5	3.5
Kraft .....	1949	100	21	21	1	0

\* None had sanatorium care following the acute phase.

TABLE II

Patients with Primary Serofibrinous Pleural Effusion Who Subsequently Relapsed With Tuberculosis, Classified By Age At Onset

Age at Onset	Patients with Primary Serofibrinous Pleural Effusion		
	Total	Those Who Subsequently Relapsed with Tuberculosis	
		Number	Per Cent of Total
All ages .....	141	92	65.2
18 to 24 years .....	73	55	75.3
25 to 45 years .....	68	37	54.4

TABLE III

Patients with Primary Serofibrinous Pleural Effusion Who Did Not Relapse During Original Hospitalization But Who Subsequently Relapsed With Tuberculosis, Classified By Months of Rest

Months of Rest	Patients with Primary Serofibrinous Pleural Effusion Who Did Not Relapse During Original Hospitalization		
	Total	Those Who Subsequently Relapsed With Tuberculosis	
		Number	Per Cent of Total
Total .....	123	79	61.7
Less than 6 months (mean = 4.8 months)	66	60	90.9
6 months or more (mean = 10.4 months)	62	19	30.6

who received less than six months of such care showed a relapse incidence of 91 per cent as contrasted with 31 per cent relapse among the 62 patients who had more than six months of treatment.

The demonstration of an eventual occurrence rate of tuberculosis in the order of 91 per cent in untreated patients with pleurisy with effusion would certainly seem to clinch the reasonability of considering all "idiopathic" (i.e. undiagnosable) pleural effusions as tuberculous. It would seem equally reasonable to institute appropriate tuberculosis therapy in patients who have pleurisy with effusion. That this is a wise approach, in general, is demonstrated by data collected from Veterans Administration study units indicating a greatly decreased tuberculosis relapse rate in pleurisy patients who received anti-tuberculous chemotherapy as part of their management (3).

As with all general rules in medicine, however, such a generalization exists only to be challenged. The existence of a general rule always entails the possibility that it will be applied to an individual patient in an indiscriminating way. Historical and personal clinical experience will quickly demonstrate the necessity to firmly establish an etiologic diagnosis in any given patient. This leads to the second consideration of the present discussion.

An interesting and important new development in the study of pleurisy with effusion has occurred with the use of needle biopsy of the parietal pleura. There are three types of needle now available for this procedure: the Vim-Silverman, the Abrams (4), and the Cope (5). Most physicians are familiar with the Vim-Silverman needle and its principle. With sufficient experience, one can use it quite successfully to biopsy the parietal pleura. Our own preference is for the Abrams needle, which is also referred to as the Harefield needle. This instrument is designed specifically for biopsy of the parietal pleura and will consistently yield a sizable piece of parietal pleura with adjacent connective tissue for microscopic study. We have had no experience with the Cope needle.

Of the many studies now reported on pleural biopsy, the two most significant are those of Donohoe (6) and of Mestitz (7). Tables IV and V are taken from Donohoe's report.

In Table IV are shown the results of 78 Vim-Silverman needle biopsies of the pleura. Donohoe divided his patients into three groups, on the basis of initial clinical impression, as follows: Group I, who were thought to have tuberculous pleurisy with effusion; Group II, who had effusion consequent to malignant tumor; and Group III, who were indeterminate on clinical grounds.

TABLE IV  
Results of Aspiration Biopsy Performed in 78 Patients with Pleural Effusion

	Clinical Impression	No. of Cases	Gran.	NSP	Mal.	Norm.	Inad.
I	Tuberculosis	38	20(52.6%)	12(31.5)	0	0	6(15.9)
II	Malignancy	19	0	7(36.8)	8(42.1)	1(5.5)	3(15.6)
III	Indeterminate	21	2(9.6%)	10(47.6)			9(42.8)
	Totals	78	22(28.2)	29(37.3)	8(10.3)	1(1.1)	18(23.1)

TABLE V  
Results Obtained in the 54 Patients in Whom Surgical Biopsy was Performed

Indication for Surgical Biopsy	No.	G	NSP	Mal.	Nor.	Inad.
A. Inadequate specimens obtained at aspiration biopsy	7	3	4	0	0	0
B. Non-specific pleuritis obtained at aspiration	14	5	6	3	0	0
C. No prior biopsy	33	15	11	2	4	1
TOTALS	54	23	21	5	4	1

TABLE VI

## Biopsy Diagnoses In The Whole Series

Group	Number of cases	BIOPSY RESULTS			
		Tuberculous	Malignant	Not Diagnostic	Inadequate
I	152	70	21*	59	2
II	36	1	10	24	1
III	12	—	2	9	1
Totals	200	71	33	92	4

\* Includes 1 misdiagnosis.

The most significant points to make from this table are:

1. Granulomatous change was found in 53 per cent of the tuberculosis suspects, non-specific pathologic change in 31 per cent, and inadequate biopsy material was obtained in 16 per cent.

2. Whereas the demonstration of granuloma is consistent with tuberculosis and affords reasonable clinical proof of that diagnosis, the demonstration of non-specific change or the occurrence of an inadequate biopsy does not exclude a diagnosis of tuberculosis. This is shown in Table V.

From this work by Donohoe, Katz, and Matthews, one may see adequate pathologic demonstration of the frequency with which tuberculosis causes idiopathic pleural effusion. Their study also indicates the care and thoroughness required to establish the diagnosis. They bring into view a new problem, that of the pleurisy patient who, after thorough exploration, cannot be shown to have tuberculosis as the cause of his effusion. Such individuals may number about 20 per cent of an overall group presenting the

clinical problem of idiopathic pleural effusion. They pose the pertinent questions of whether or not they should be considered tuberculous with all the implications of such a diagnosis and whether or not they should be treated with anti-tuberculous chemotherapy.

The second study referred to of biopsy material in pleurisy with effusion is that of Mestitz, Purves, and Pollard. They divided 200 biopsied patients into three groups. The second and third groups were not biopsied for diagnostic purposes and are not pertinent to the present discussion. Group I, however, contained 152 patients which were biopsied for diagnostic purposes with the Abrams (Harefield) needle. The biopsy results are shown in the top line of Table VI.

Of the 152 patients, 70 yielded tissue containing granulomata, 20 yielded tissue with carcinoma (plus one misdiagnosed as carcinoma), and 59 showed non-diagnostic findings. There were only two inadequate specimens, which outcome probably reflects the better design of the Abrams instrument.

TABLE VII

## The Non-Diagnostic Biopsies in Group I

Initial Diagnosis	Number of cases	FINAL DIAGNOSES						
		MALIGNANT		TUBERCULOUS		PYOGENIC		NOT KNOWN
		Proved	Probable	Proved	Probable	Proved	Probable	
Malignant	20	7	3	—	—	2	4	4
Tuberculous	26	1	—	3	12	1	1	8
Pyogenic	13*	1	—	—	—	5*	7	—
TOTALS	59	9	3	3	12	8	12	12
		12		15		20		

\* Includes 1 pulmonary infarction.



In Table VII, the 59 patients whose findings were not diagnostic on needle biopsy were divided into three groups, based on the initial diagnostic impression. Of the 26 thought to be tuberculous but showing non-diagnostic changes, three were proven bacteriologically to be tuberculous, twelve were probably tuberculous, two were pyogenic effusions, eight were unknown, and one was due to malignancy. Unfortunately, Mestitz did not resort to open surgical biopsy as Donohoe did; thus 20 of his patients must be left either in the probably tuberculous (12) or unknown (8) groups. Of the 20 patients thought to have malignancy, but with non-specific findings on biopsy, ten in fact had malignancy, eight were undiagnosed as to cause of their effusion, and two had pyogenic pleuritis.

The important consideration for our present discussion, however, is that among those patients clinically thought to have tuberculous pleurisy were 22 patients who were not shown to have it. One must again face up to the question of management of this idiopathic group. In estimating the frequency of these unidentifiable effusions, one should add the further comment in regard to both Donohoe's and Mestitz's series that it was in 20-30 per cent of the patients actually thought to be tuberculous on clinical grounds that they failed to prove the existence of tuberculosis. Each author had incidental groups of patients, which Donohoe referred to as indeterminate and Mestitz as Groups II and III, in whom tuberculosis was not the leading clinical impression.

In consideration of these clinical and pathologic studies, the following generalizations about pleurisy with effusion would seem to afford a reasonable background on which to base the clinical management of such patients.

1. It is convenient to think of pleural effusions as secondary and primary, the latter including all those in whom the cause of effusion cannot be demonstrated by roentgenographic and bacteriologic study.

2. Tuberculosis is a frequent cause of the primary, or idiopathic, type of pleural effusion.

3. Those patients who, after conventional clinical evaluation, may be classified among the idiopathic pleural effusion group should be considered as tuberculous and so managed in the light of our present knowledge about the treatment of tuberculosis.

4. The reservation must be kept in mind that such a group of patients may contain 20 to 30 per cent who are, in fact, not tuberculous. If the proper clinical, pathologic, and surgical facilities are available, this primary group should be screened further to exclude the non-tuberculous patients from the implications of a diagnosis of tuberculosis.

5. Needle biopsy of the parietal pleura is a useful diagnostic procedure. The demonstration of non-specific pathologic changes or normal pleura on needle biopsy, however, does not exclude tuberculosis or other cause of pleural effusion. The patients in this group must be brought to surgical exploration of the chest to exclude tuberculosis.

6. Those patients who, on completion of thorough study, are not found to have pathologic evidence of tuberculosis of pleura or of lung may not have tuberculosis as the cause of the effusion. Whether this group should be considered tuberculous and treated as such is presently a moot point which is in need of further clinical study.

7. At the present time, these patients should not be diagnosed as having tuberculous pleurisy with effusion. They properly form a new group with "idiopathic" pleurisy with effusion, the cause or causes of which are presently unknown.

**University of Maryland  
School of Medicine  
Baltimore 1, Maryland**

#### REFERENCES

1. Falk, A.: *Dis. of the Chest* **XVIII**, 1950.
2. Roper, W. H., and Waring, J. J.: *Am. Rev. Tuberc.* **71**:616, 1955.
3. Falk, A., and Stead, W. W.: *Am. Rev. Tuberc.* **74**:897, 1956.
4. Abrams, L. D.: *Lancet* **1**:30, 1958.
5. Cope, C.: *J.A.M.A.*, **167**:1107, 1958.
6. Donohoe, R. F., Katz, S., Matthews, M. J.: *Ann. Int. Med.* **48**:344, 1958.
7. Mestitz, P., Purves, M. J., Pollard, A. C.: *Lancet* **p. 1349**, 1958.





## ALLEGANY-GARRETT COUNTY MEDICAL SOCIETY

LESLIE E. DAUGHERTY, M.D.

*Journal Representative*

### TON VAN STRIEN DISCUSSES PUBLIC HEALTH PROBLEMS WITH COUNTY SOCIETY OFFICERS

**T**ON VAN STRIEN, M.D., Allegheny County Health Officer, discussed health activities in the public schools at a recent meeting with officers of the Allegheny-Garrett County Medical Society, in which he outlined the vision and hearing program in Allegheny County schools.

The primary responsibility for health services to children of school age is shared jointly by the state and county Departments of Education and Health. These health services are of a supplementary nature to alert parents to the need for taking their children to the family physician or pediatrician and to assist them in getting the needed care when they are unable to do so for themselves.

Examination of children's sight and hearing is made on the following basis: 1. Daily observation by the children. 2. Teacher-nurse conference, which is a periodic classroom health appraisal. 3.

Supplementing these, vision and hearing tests are given by a technician employed by the Board of Education or, in some instances, by a public health nurse. The orthorater is used for testing the vision, and hearing is tested with a pure tone audiometer. Testing is done on an individual rather than a group basis. Letters to parents giving the results of these screening tests are designed locally by the Departments of Education and Health. They stress that the tests used do not constitute a diagnosis and suggest that the child be taken to the family physician, pediatrician, or other specialist for further diagnosis. The parents may, instead, request an appointment at the Eye and Hearing Clinic of the Health Department. This choice is given to the parents because of the large number of indigent cases in the county.

The Eye and Hearing Clinics are held once or



Left to right: Ton van Strien, M.D., Allegheny County Health Officer; Carlton Brinsfield, M.D., Vice-President, Allegheny-Garrett County Medical Society; Timothy Lewis, M.D., Secretary, Allegheny-Garrett County Medical Society.

twice a month. The clinician in the Hearing Clinic is an assistant resident in the Department of Otorhinolaryngology at Johns Hopkins University, who visits the clinic twice a month. His clinical fee is paid by funds from local health services of the Health Department and includes compensation for travel and hotel costs.

Children admitted to the clinic are screened by the clinician and subsequently either discharged or referred to the family physician or a specialist, especially when a tonsillectomy and adenoidectomy may be part of the recommendation. In families where financial indigency exists, tonsillectomies and adenoidectomies are referred to two participat-

ing physicians in Allegany County who perform this operation on needy children, with fees paid to the physician by funds made available under the Medical Care Program of the State Department of Health. Additional cases are provided for by funds from the Cumberland Lions Club Tonsillectomy Fund.

The Cumberland Lions Club, under its Sight Conservation Program, has also assumed considerable financial responsibility for indigent eye clinic patients through a direct financial agreement with the clinician or specialist approved by the club. His fees and equipment are donated by the local club. David H. Miller, M.D., of Cumberland, is the examining eye physician for these cases.

## POLIO IMMUNIZATION IN ALLEGANY COUNTY

A TOTAL OF 2,354 polio injections have been given in clinics held throughout Allegany County during May, June, July, and August. Sponsored by the Allegany County Health Department, the clinics were held in the city of Cumberland, as well as the areas of Westernport, Frostburg, Lonaconing, Cresaptown, and Oldtown. Local physicians in each community gave inoculations, assisted by the public health nurses and lay workers.

In the under 20 age group, 149 individuals re-

ceived their first injection, 139 persons their second injection, 90 persons their third injection, and 1,160 persons their fourth inoculation.

In the age group 20 to 40, 318 individuals received their first injection, 247 their second injection, 66 their third injection, and 193 their fourth injection. Thus, 1,530 injections were given to the under 20 age group and 824 injections to the 20 to 40 age group.

In a recent survey of the school population in Allegany County, which is approximately 15,000, it was revealed that 85 per cent of first graders admitted to schools had received three or more polio shots in either baby clinics or from the private physician.

Look sharply after your thoughts.

—Ralph Waldo Emerson

## PERSONALS

Dr. and Mrs. L. Lewis Mould, Cumberland, vacationed in Puerto Rico and Haiti.

**Allegany County Health Officer, Ton van Strien, M.D., and his wife have returned from a stay at Niagara Falls, Buffalo, and parts of Canada. A. J. Mirkin, M.D., Cumberland, attended the meeting of the American Association for Automotive Medicine September 19-20 at Dearborn, Michigan.**

**W. Royce Hodges, M.D., chairman of the Research Committee of the Health, Research and Services Foundation of County United Fund, spoke at a recent meeting of the Cumberland Rotary Club. At a gathering of the Cumberland Optimist Club, Abdul S. Hashim, M.D., was a guest speaker.**

**Walter N. Himmeler, M.D., has opened an office at 412 Mechanic Street, Cumberland. His practice is limited to urology.**

Dr. Himmler graduated from the University of Maryland School of Medicine and served his internship at University Hospital, Baltimore. He has just completed two years of service as resident surgeon in urology at the same hospital. A native

of Cumberland, he is married to the former Velma Beall.

### MULTIPLE SCLEROSIS CAMPAIGN

A total of \$2,173.22 has been collected in the recent Multiple Sclerosis drive in Allegany County.

## ANNE ARUNDEL COUNTY MEDICAL SOCIETY

A SPECIAL MEETING of the Anne Arundel County Medical Society was held on July 27, 1960, to act upon a number of applications for membership in the Society. Alvin W. Hecker, M.D., Gerard Church, M.D., James W. Hayes, M.D., Richard I. Hockman, M.D., Albert F. Cooper, M.D., and Joseph E. Cooper, M.D., were duly elected to the Society. Ernest Leipold, M.D.,

Samuel Borssuck, M.D.

*Journal Representative*

and George W. Settle, M.D., were also elected to the Society on transfer from the Baltimore City Medical Society. This brings the Anne Arundel County Medical Society membership to 93, including four honorary members.



## BALTIMORE COUNTY MEDICAL ASSOCIATION

LOUIS DALMAU, M.D.

*Journal Representative*

JULY WAS VACATION time for the officers and members of the Association.

Our annual crab feast was held at Duffy's Tavern in Catonsville on August 17. Seventy-five people attended. This event is intended to cultivate and maintain fellowship among the members of the Association. The champion crab eater, who hasn't missed a crab feast in the last 15 years, was present again and unbeatable as usual: J. Runkles, M.D., from Spring Grove. Have you ever been to this affair? Don't miss it next year.

### POLIO IMMUNIZATION

The Baltimore County Medical Association urged county residents to obtain the required number of polio inoculations before the onset of polio season. In publicity through the newspapers, county physicians stressed the need for four doses of vaccine for adequate protection. Particular emphasis was given to the danger which threatens the

preschool child, who does not appear to be as well protected against polio as do his older brothers and sisters. This is the age group in which nearly one-half of all paralytic cases of polio occurred during the last year.

The warning by the Baltimore County Medical Association followed a report and a similar warning published by the Baltimore County Health Department regarding the adequacy of polio protection among children attending schools in the several areas of Baltimore County. According to the results of the recent survey reported by the Baltimore County Health Department, 79 per cent of children attending schools in Baltimore County have had three or four polio injections, the largest totals occurring in the northeastern and southeastern sections of the county. The elementary school group has the highest proportion of individuals receiving three or four injections.

Data obtained from the survey of junior and senior high schools show that 77 per cent of these individuals have received three and four polio injections. In this group, the percentage of individuals fully protected against polio was better than



80 per cent, with the exception of those residing in the northeastern and southeastern parts of the county. In the northeastern section of the county, 67 per cent of high school students have received three and four injections; and in the southeastern sections of the county, 70 per cent of individuals in the schools have received three and four injections.

## CIVIL DEFENSE SEMINAR

A CIVIL DEFENSE Seminar, titled "A Way to Survive," will take place October 19 at the National Guard Armory, Pikesville. Sponsored by the Woman's Auxiliary to the Medical and Chirurgical Faculty and the Baltimore County Medical Association, the program offers topics of vital importance to preparedness for and action in an emergency. A tour of Civil Defense Headquarters in Pikesville will climax the day's activities.

9-10 a.m. Registration (coffee hour).

10:00 a.m. Invocation—Rev. John J. Moran, Assistant St. Charles Borromeo Church

and Archdiocesan Representative to Maryland Civil Defense.

10:05 a.m. Greetings—Dr. I. Ridgeway Trimble, Civil Defense Chairman, Medical and Chirurgical Faculty of the State of Maryland.

10:15 a.m. First Aid in an Emergency—Miss Blair Stewart, R.N., Norfolk Civil Defense Office. Introduced by Mrs. William S. Stone, President Woman's Auxiliary to the Medical and Chirurgical Faculty of the State of Maryland.

11:00 a.m. Civil Defense and YOU—Miss Alice Smith, R.N., Chief of Nursing, Washington Missionary College. Introduced by Mrs. Walter M. Hammett, President Woman's Auxiliary Baltimore County Medical Association.

11:45 a.m. Mouth to Mouth Resuscitation (film)—Comments by Dr. Charles H. Williams, Baltimore County Medical Association. Introduced by Dr. Martin Strobel, Disaster Chairman, Baltimore County Medical Association.

adult  
stable  
diabetics  
and a  
significant  
number of  
sulfonyleurea  
failures  
respond to

**DBI**

trademark,  
brand of Phenformin HCl

### adult stable diabetes

"In our experience the action of DBI on the adult stable type of diabetes is impressive . . . **88% were well controlled by DBI.**"<sup>1</sup>

"Most mild diabetic patients were well controlled on a biguanide compound [DBI], and such control was occasionally superior to that of insulin. This was true regardless of age, duration of diabetes, or response to tolbutamide."<sup>2</sup>

"DBI has been able to replace insulin or other hypoglycemic agents with desirable regulation of the diabetes when it is used in conjunction with diet in the management of adult and otherwise stable diabetes."<sup>3</sup>

### sulfonyleurea failures

Among those diabetics who responded to tolbutamide initially and became secondary failures DBI "gave a satisfactory response in 55%."<sup>4</sup>

"DBI is capable of restoring control in a considerable portion of patients in whom sulfonyleurea compounds have failed, either primarily or secondarily."<sup>5</sup>

"All twelve secondary tolbutamide failures have done well on DBI."<sup>6</sup>

"34 out of 59 sulfonyleurea primary failures were successfully treated with DBI."<sup>7</sup>





- 12:15 p.m. Securing a Safe Water Supply in an Emergency—Mr. J. Henry Schilpp, Public Health Engineer, Bureau Environmental Hygiene, Maryland Department of Health. Introduced by Senator Wm. Bolton, Director Civil Defense, Baltimore County.
- 12:45 p.m. Twenty Points in Preparing Your Home for Survival—Mrs. J. Carl Wheelock, Steering Committee, Office of Civilian Defense, Region 2. Introduced by Mr. Sherley Ewing, Director Civil Defense, State of Maryland.
- 1:00 p.m. Luncheon—Served in Sudbrook Methodist Church (1 block south of Armory, Reisterstown Road).
- 2:00 p.m. Radiation Fallout—Mr. Cosmo Liberti, Physical Sciences Administrator, Chemical and Biological Warfare, Office of Civilian Defense Mobilization, Region 2. Introduced by Dr. Margaret Sherrard, President, Baltimore County Medical Association.

2:45 p.m. Personal transportation to Civil Defense Headquarters, Pikesville, Md.

3:00 p.m. Tour of Shelter.

Ample parking in back of Armory and in front of shelter.

"Survival of the knowingest—not the fittest"

## FREDERICK COUNTY MEDICAL SOCIETY

L. R. SCHOOLMAN, M.D.  
Journal Representative

ON THE SURFACE, apparently, nothing has happened. There have been no births or deaths in the medical colony. Howard Ash, M.D., has toured Europe with his family and has returned to resume his burdens as chief of staff of the Frederick Memorial Hospital. But the summer sloth will soon be cast off as autumn draws near and, with it, regular monthly meetings.



# DBI

lowers  
blood sugar  
in mild,  
moderate  
and severe  
diabetes,  
in  
children  
and  
adults

## not a sulfonylurea... DBI

(N<sup>1</sup>-β-phenethylbiguanide) is available as white, scored tablets of 25 mg. each, bottles of 100.

Send for brochure with complete dosage instructions for each class of diabetes, and other pertinent information.

1. Walker, R. S.: Brit. M. J. 2:405, 1959.
2. Odell, W. D., et al.: A.M.A. Arch. Int. Med. 102:520, 1958.
3. Pearlman, W.: Phenformin Symposium, Houston, Feb. 1959.
4. DeLawter, D. E., et al.: J.A.M.A. 171:1786 (Nov. 28) 1959.
5. McKendry, J. B., et al.: Canad. M. A. J. 80:773, 1959.
6. Miller, E. C.: Phenformin Symposium, Houston, Feb. 1959.
7. Krall, L. P.: Applied Therapeutics 2:137, 1960.

an original development from the research laboratories of

u. s. vitamin & pharmaceutical co.

Arlington-Funk Laboratories, division  
250 East 43rd Street, New York 17, N. Y.



## MONTGOMERY COUNTY MEDICAL SOCIETY

CHARLES FARWELL, M.D.

Journal Representative

**H**AROLD H. MITCHELL, M.D., authored a special article published in the *Medical Annals of the District of Columbia*, titled "Medical Leadership for School Health Services."

Carolyn Pincock, M.D., attended the International Medical Women's Association in Baden-Baden, Germany as a delegate from the American Medical Women's Association.

There was an epidemic of infectious syphilis in the upper county area among Negro males and females aged 15-25. At least 22 cases have been reported to the Montgomery County Health Department. Our County Medical Society, through our *Bulletin*, alerted physician members.

Our Emergency Medical Service is becoming well known as a result of the efforts of public relations chairman, Alfred S. Norton, M.D. Two hundred or more physician members are cooperating

by making available our medical services for 24 hours. If someone is in urgent need of a doctor, he phones the Medical Emergency call number (LO. 5-5000); the Medical Society's telephone operator inquires what community the patient is in and phones the physician member available in that community; the cooperating physician member then contacts the patient. The 200 members of our Society who willingly sacrifice a part of their valuable time to make their professional services available to people in emergency distress deserve gratitude from all concerned.

We sponsored a public educational program on the advisability of tetanus immunization as well as polio immunization. It is hoped our efforts will decrease the reactions sustained by people who forget to keep up their tetanus booster shots and have to take tetanus antitoxin with its greater risks of reaction.

### SEMINAR ON KIDNEY DISEASE

The Southeastern Region of the College of American Pathologists and the Virginia Society of Pathologists will hold a joint meeting at the John Marshall Hotel in Richmond, Virginia, on November 25 and 26, 1960, on kidney disease. The speakers will include Drs. Stanley M. Kurtz, Peter P. Ladewig, Henry D. McIntosh, George Margolis, Conrad L. Pirani, David E. Smith, and Max Wachstein. The slide seminar will be conducted by Drs. Paul Kimmelstiel and Solomon Papper. The dinner speaker will be Dr. Frank C. Coleman, president of the College of American Pathologists.

The slide sets for this seminar on kidney disease may be purchased at a cost of \$15.00 per set by writing to: Dr. G. T. Mann, Professor of Forensic Pathology, P. O. Box 41, Medical College of Virginia, Richmond 19, Virginia.

# MELWOOD FARM—

## *a new approach to the rehabilitation of alcoholics*



Tranquilizing drugs and hospital treatment help the acute alcoholic over the first hurdle toward recovery, but these are temporary measures which do little to solve the problems that lead him to further drinking. In the relaxed, colonial atmosphere of Melwood Farm, in Montgomery County, the addict who has completed withdrawal from alcohol can receive further professional help toward rebuilding his physical and mental health and, thus, better effecting his permanent rehabilitation.

Melwood maintains a comfortable, gracious, and leisurely homelike environment wherein the pressures of day to day living are reduced. Guests enjoy a freedom from set rules and rigid schedules. Every patient, whether he rises early or late, finds a thermos of hot coffee outside his door to help him start the day, and the coffeepot perks around the clock. A guest may fish in Melwood's spring-fed lake, help with the farm chores, enjoy peaceful walks around the 40-acre wooded tract, browse in the library, or simply do nothing. In the evening he may find fellowship in music, cards, movies, or television.

A planned program of informal group discussions and individual counseling is provided to help each patient develop a better understanding of himself and of his illness. The program is supplemented by educational films, tape recordings, and books on alcoholism. The resources of Alcoholics Anonymous, which meets at Melwood Farm every Friday evening, are available to those patients who wish to participate.

The staff is sympathetic to the problem of alcoholism and is trained and experienced in its treatment. Staff physicians are available daily for individual and group counseling, and specialized medical care is available when required. W. F. Cresswell, Jr., M.D., a member of the Montgomery County Medical Society, and Earl H. Mitchell, M.D., direct the rehabilitation program.

Located near Olney, Maryland, the three-story manor house and nearby carriage house have accommodations for ten men and women. Built in 1892, the house has been enlarged and modernized, but its decor reflects the warmth and dignity of a century ago. Bedrooms are cozy and comfortable, those in the carriage house decorated for masculine tastes. The dining room, with its handwrought Colonial hearth, typifies friendliness and informality. The guest cottage, which is used as a recreation and group therapy center, is informal and cheerful with Early American furnishings.

Melwood Farm accepts only patients who have ceased drinking. Prospective guests must be sponsored by a physician, a clergyman, or a member of Alcoholics Anonymous. Two to four weeks of uninterrupted residence is suggested in order that patients may gain the full benefit of Melwood's comprehensive program. The patient's family and employer are encouraged to participate in the recovery program, and assistance is given them whenever possible.



# OBITUARIES

## **MICHAEL A. ABRAMS, M.D.**

A man truly devoted to both art and science, Michael A. Abrams, M.D., passed away on June 22. At 75, he had been suffering from a lengthy illness.

In the field of science, Dr. Abrams, an alumnus of the former College of Physicians and Surgeons, served on the staffs of Mercy and Sinai Hospitals. The latter had recently honored him for 50 years of medical service to the community.

During World Wars I and II, Dr. Abrams was medical head of his draft board. He was a state coroner under former Governors Goldsborough and Nice.

As an art devotee, he was both an antiquarian and a collector. He contributed numerous pieces of art, as well as personal service, to the various local galleries.

Survivors include his wife, Mrs. Marie S. Abrams, four children, one of whom is Robert C. Abrams, M.D., of Baltimore City, and 12 grandchildren.

## **RICHARD L. BRESNAHAN, M.D.**

On August 8, Richard Landers Bresnahan, 31-year-old Associate Member of the Baltimore City Medical Society, died of wounds. He had begun a year's training in obstetrics and gynecology at the Johns Hopkins Hospital a month before his death.

## **DeWITT B. CASLER, M.D.**

DeWitt B. Casler, M.D., retired gynecologist who had been associated with the Johns Hopkins Hospital for more than half a century, died July 1 at the age of 82. It was at Hopkins that he pursued his medical studies, graduating in 1904 and then serving his internship. In 1909 he was appointed chief resident in gynecology. In later years he became associate professor of gynecology and eventually associate professor emeritus.

Other hospitals with which Dr. Casler had been associated at various times include Church Home and Hospital, Sinai, Union Memorial, Bon Secours, St. Joseph's, and Hospital for the Women of Maryland. At the time of his death he was chairman of the medical advisory board of the Nemours Foundation and Alfred I. duPont Institute.

One son, DeWitt B. Casler, Jr., and two grandchildren survive.

## **HARRY RAY COBURN, M.D.**

A Charles County pediatrician, Harry Ray Coburn, M.D., died March 18 at the age of 77. He had practiced in the Bryantown area since 1952.

A native New Englander, Dr. Coburn graduated from Tufts Medical School in 1908. He began his medical career in general practice in Westford, Mass.



In addition to his private practice, Dr. Coburn conducted baby clinics in Charles and St. Mary's Counties.

He leaves his wife, the former Gertrude Steffens, and a sister.

**WILLIAM H. COULBOURN, M.D.**

Somerset County's deputy medical examiner died July 30 at the age of 80. William H. Coulbourn, M.D., had practiced medicine in Crisfield for 50 years.

Receiving his medical degree in 1901 from the University of Maryland School of Medicine, Dr. Coulbourn served as resident physician at the old Bay View Hospital and at the Hospital for the Women of Maryland. He returned to Crisfield in 1905 to practice and was on the medical staff of McCready Memorial Hospital, Crisfield.

In 1955 Dr. Coulbourn retired from active practice, but he continued to serve as medical examiner until his death.

His survivors include his wife, Mrs. Isabelle G. Coulbourn, a son, Hugh A. Coulbourn, of Long Island, N. Y., and a sister, Miss Henrietta Coulbourn, of Crisfield.

**CHARLES R. FOUTZ, M.D.**

Charles R. Foutz, M.D., 87, died August 2. A native of Carroll County, he had practiced in Westminster for 60 years until his retirement two years ago.

He studied medicine at both University of Maryland and Johns Hopkins University Medical Schools.

Surviving Dr. Foutz are four children and a sister.

**WATSON WOMACK GRAY, M.D.**

At age 68, Watson Womack Gray, M.D., Baltimore obstetrician, died on August 29. He had maintained active practice until his illness a month before.

In 1924 Dr. Gray graduated from the Johns Hopkins University School of Medicine. He had been a member of the Hopkins teaching staff until his death. He was on the hospital staffs of Hopkins, Union Memorial, and the Hospital for the Women of Maryland.

Among his survivors are his wife, Mrs. Dorothy Davis Gray, a daughter, who is the wife of Frederick M. Zervazy, M.D., and two sons, Richard W. and Thomas A. Gray.

**S. BUTLER GRIMES, JR., M.D.**

After a brief illness, S. Butler Grimes, Jr., M.D., 56, died on July 3. He was a Baltimore pediatrician.

His medical degree was earned at the University of Virginia School of Medicine, after which he returned to Baltimore to serve his internship at Johns Hopkins and Union Memorial Hospitals. He was an instructor in pediatrics at the Johns Hopkins University School of Medicine and supervisor of medical services of the Baltimore Department of Education.

Dr. Grimes leaves his wife, Elizabeth Brawner Grimes, a son, and two daughters.

# OBITUARIES

## **MICHAEL A. ABRAMS, M.D.**

A man truly devoted to both art and science, Michael A. Abrams, M.D., passed away on June 22. At 75, he had been suffering from a lengthy illness.

In the field of science, Dr. Abrams, an alumnus of the former College of Physicians and Surgeons, served on the staffs of Mercy and Sinai Hospitals. The latter had recently honored him for 50 years of medical service to the community.

During World Wars I and II, Dr. Abrams was medical head of his draft board. He was a state coroner under former Governors Goldsborough and Nice.

As an art devotee, he was both an antiquarian and a collector. He contributed numerous pieces of art, as well as personal service, to the various local galleries.

Survivors include his wife, Mrs. Marie S. Abrams, four children, one of whom is Robert C. Abrams, M.D., of Baltimore City, and 12 grandchildren.

## **RICHARD L. BRESNAHAN, M.D.**

On August 8, Richard Landers Bresnahan, 31-year-old Associate Member of the Baltimore City Medical Society, died of wounds. He had begun a year's training in obstetrics and gynecology at the Johns Hopkins Hospital a month before his death.

## **DeWITT B. CASLER, M.D.**

DeWitt B. Casler, M.D., retired gynecologist who had been associated with the Johns Hopkins Hospital for more than half a century, died July 1 at the age of 82. It was at Hopkins that he pursued his medical studies, graduating in 1904 and then serving his internship. In 1909 he was appointed chief resident in gynecology. In later years he became associate professor of gynecology and eventually associate professor emeritus.

Other hospitals with which Dr. Casler had been associated at various times include Church Home and Hospital, Sinai, Union Memorial, Bon Secours, St. Joseph's, and Hospital for the Women of Maryland. At the time of his death he was chairman of the medical advisory board of the Nemours Foundation and Alfred I. duPont Institute.

One son, DeWitt B. Casler, Jr., and two grandchildren survive.

## **HARRY RAY COBURN, M.D.**

A Charles County pediatrician, Harry Ray Coburn, M.D., died March 18 at the age of 77. He had practiced in the Bryantown area since 1952.

A native New Englander, Dr. Coburn graduated from Tufts Medical School in 1908. He began his medical career in general practice in Westford, Mass.

In addition to his private practice, Dr. Coburn conducted baby clinics in Charles and St. Mary's Counties.

He leaves his wife, the former Gertrude Steffens, and a sister."

**WILLIAM H. COULBOURN, M.D.**

Somerset County's deputy medical examiner died July 30 at the age of 80. William H. Coulbourn, M.D., had practiced medicine in Crisfield for 50 years.

Receiving his medical degree in 1901 from the University of Maryland School of Medicine, Dr. Coulbourn served as resident physician at the old Bay View Hospital and at the Hospital for the Women of Maryland. He returned to Crisfield in 1905 to practice and was on the medical staff of McCready Memorial Hospital, Crisfield.

In 1955 Dr. Coulbourn retired from active practice, but he continued to serve as medical examiner until his death.

His survivors include his wife, Mrs. Isabelle G. Coulbourn, a son, Hugh A. Coulbourn, of Long Island, N. Y., and a sister, Miss Henrietta Coulbourn, of Crisfield.

**CHARLES R. FOUTZ, M.D.**

Charles R. Foutz, M.D., 87, died August 2. A native of Carroll County, he had practiced in Westminster for 60 years until his retirement two years ago.

He studied medicine at both University of Maryland and Johns Hopkins University Medical Schools.

Surviving Dr. Foutz are four children and a sister.

**WATSON WOMACK GRAY, M.D.**

At age 68, Watson Womack Gray, M.D., Baltimore obstetrician, died on August 29. He had maintained active practice until his illness a month before.

In 1924 Dr. Gray graduated from the Johns Hopkins University School of Medicine. He had been a member of the Hopkins teaching staff until his death. He was on the hospital staffs of Hopkins, Union Memorial, and the Hospital for the Women of Maryland.

Among his survivors are his wife, Mrs. Dorothy Davis Gray, a daughter, who is the wife of Frederick M. Zervy, M.D., and two sons, Richard W. and Thomas A. Gray.

**S. BUTLER GRIMES, JR., M.D.**

After a brief illness, S. Butler Grimes, Jr., M.D., 56, died on July 3. He was a Baltimore pediatrician.

His medical degree was earned at the University of Virginia School of Medicine, after which he returned to Baltimore to serve his internship at Johns Hopkins and Union Memorial Hospitals. He was an instructor in pediatrics at the Johns Hopkins University School of Medicine and supervisor of medical services of the Baltimore Department of Education.

Dr. Grimes leaves his wife, Elizabeth Brawner Grimes, a son, and two daughters.

**LOUIS P. HAMBURGER, SR., M.D.**

Johns Hopkins Medical School's first student, Louis P. Hamburger, Sr., M.D., died August 26. He was 86.

His fascination for sleight-of-hand led him to a career in medicine. He had entered the Maryland College of Pharmacy, hoping that a study of chemistry would aid him in performing magic tricks based on chemical illusion. He was such an apt student that an instructor persuaded him to study medicine instead of magic.

As the first student to enroll at the Hopkins Medical School, Dr. Hamburger was also in the first graduating class, 1897. From 1905 to 1948 he was assistant professor of medicine, then was made professor emeritus. He was on the staffs of many other Baltimore hospitals and held memberships in a large number of professional organizations.

Dr. Hamburger was among the first physicians to emulate Dr. Osler in the method of diagnosing and treating with a specific remedy instead of the then popular "shotgun" treatment, whereby a prescription of many components was given in the hope that one would cure. He was also the first physician in Baltimore to use insulin.

His medical achievements are too lengthy to list here. Twenty of his major contributions to medicine were included in the souvenir program distributed at a testimonial dinner in 1948 in honor of his 75th birthday.

Louis P. Hamburger, Jr., M.D., is a survivor, as are the deceased's wife, Mrs. Freda R. Hamburger, and another son, Frederic H. Hamburger.

**JAMES G. SASSCER, M.D.**

The many colleagues and friends of James G. Sasscer, M.D., were shocked by his sudden death on June 15, 1960. He would have celebrated his 60th birthday on June 25.

Dr. Sasscer was convalescing at his home in Upper Marlboro, following a recent operation. Suddenly, he suffered an acute coronary thrombosis and died soon after being admitted to the Prince George's General Hospital.

A graduate of Tome Preparatory School, the University of Virginia, and the University of Maryland Medical School, Dr. Sasscer was a loyal and vigorous worker in the Prince George's County Medical Society, having served as its president. He had also been president of the Southern Maryland Medical Society.

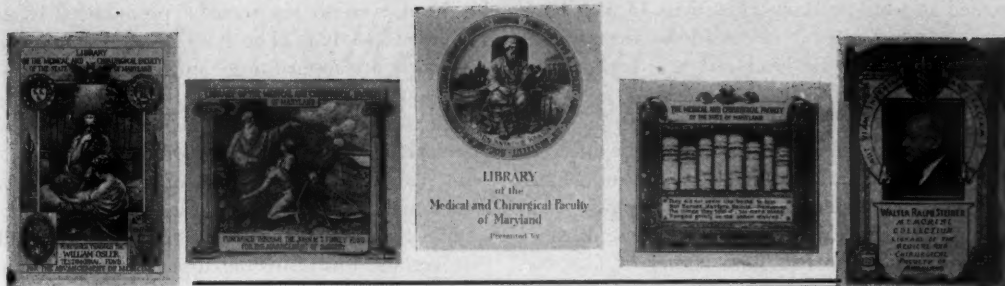
Among his colleagues, he will best be remembered as one of the small group of doctors who did so much to establish the Prince George's General Hospital and who took great pride in seeing it develop into one of the largest and most efficient hospitals in our state. At one time Dr. Sasscer had the honor of serving as president and chief-of-staff of this hospital. He worked capably on many committees and always carried out his duties enthusiastically.

A son of the late Frederick Sasscer and Lucy Clagett, he was married in 1940 to Rosalie Gill Jacobsen, who survives him. He leaves one son also, James G. Sasscer, Jr., of Upper Marlboro.

On September 6, 1960, a room at the Prince George's General Hospital was dedicated by his colleagues to the memory of Dr. James Sasscer.

**John Haught, M.D.**  
President, Prince George's County Medical Society





## Library

Louise D. C. King, *Librarian*

"Books shall be thy companions; bookcases and shelves,  
thy pleasure-nooks and gardens." *Ibn Tibbon*

## LEPROSY

Louis A. M. Krause, M.D.\*

**L**EPROSY is first mentioned in Exodus 4:6, when God gave Moses a sign to satisfy the Israelites. The sign sent upon Moses was possibly nothing more than a local skin infection which is so frequent among the Orientals. Miriam, Moses' sister, became leprosy, "white as snow" (Numbers 12:10). Now, the same words are used to designate the leprosy in Moses, whose hand became "white as snow," and in Miriam, who became leprosy "white as snow." In the case of both Miriam and Moses, the only characteristic described is the snowy whiteness of the skin. Miriam's disease was inflicted because of sin, and she remained leprosy for seven days. Moses was afflicted, as a sign, by what appears to be the same variety of disease.

The disease we diagnose as leprosy today never presents any manifestations "white as snow"; however, the non-contagious skin disease psoriasis commonly presents scales appearing white or silvery. It is certainly easy to realize that the leprosy of the Mosaic dispensation is not just one disease but embraces many skin diseases which, because of their fearful appearance, rendered the victim unclean and made it necessary for him to separate from the congregation.

There are four different forms of skin disease mentioned in Leviticus, which in their early stages

might be mistaken for leprosy: *se'eth* (rising), *sappathath* (scab), *bohereth* (white spot), and *netheg* (scab) (Leviticus 13). Only certain negative signs are given for the diagnosis; and then the diseases were identified only as clean or unclean. It is well to remember that the descriptions of these skin diseases in Leviticus were intended to enable the priest to determine between the clean and unclean forms, not to denote the differences in their nature or pathology. The following symptoms were recognized only by the appearance which gave the priest the basis for his decision: if the hair on the affected part does not become white, if the affected place on the skin does not look depressed, and if the affected area does not spread, the disease is not unclean. (Leviticus 13:34). This, of course, was the concept held by the ancients.

The term *se'eth* can be explained as a rising which implies a swelling of the skin. This is in contradistinction to the depression of the skin, which was thought to be a characteristic sign of leprosy. *Sappathath* seems to attack the head (Isaiah 3:17). *Bohereth* (white spot) is probably in some way connected with *bohiyr* (shining), and possibly refers to light spots and bald places on the dark skin (Leviticus 13:4). This condition could suggest vitiligo, because of the fact that pigment disappears from parts of the epidermis. This disease was not limited to any particular part of the body; it could occur without previous injury to the skin (Leviticus 13:2) or where there had been a boil (Leviticus 13:18) or a burning sensation (Leviticus 13:24). *Netheg* (scale) is at times re-

\*Chairman, Library Committee

garded as a mild malady (Leviticus 13:31), however, in some cases it is considered the same as the Tsara'ath of the head and beard (Leviticus 13:30).

According to the laws governing entrance into the priesthood, there are three entirely different skin diseases, garabh, yallepheth, and heres, any one of which rendered the victim unfit for this calling. The Biblical descriptions of these diseases are brief and imperfect, as a matter of fact, too insufficient for identification.

By this time it must be evident to the reader that the priest, after watching the course of a disease, declared the patient to be clean or unclean as he saw fit. This leads us to wonder of what consists the distinction between clean and unclean. It would not be wise to assume that uncleanness implied contagiousness, since we know that in many instances it did not; there is nothing in the Bible to substantiate such a concept. Again, we have no grounds for assuming that the unclean type was a fatal form of the malady or that the sufferers were even hopelessly diseased and never cleansed, whether by regular means or by exorcism. No such instance is given in the Bible. Why, for example, should one in whom the leprosy covered all the skin of his flesh and who had the plague from

his head even to his foot be pronounced clean (Leviticus 13:12)? The laws of exclusion were just as rigidly applied to the uncleanness resulting from touching a dead body as they were in cases where there was absolutely no question of contagion. If, apart from all medical or sanitary concepts, we view the characters of the disease in a ceremonial aspect alone, it is still difficult to understand why the writer of Leviticus told in detail that certain forms of the disease rendered the patient unclean and others not.

Finally, were these laws and regulations set down to promote the welfare of the people and the preservation of the future nation? We can only conjecture. Many of the laws we know were scientifically sound. The following of such a set of rules would unquestionably have helped to preserve these people who were enslaved, scattered, conquered, and ridden with disease. Too, the laws naturally would have made the Israelites aware of the "good life," which is probably one reason for which they were set forth. But the reason for proclaiming such a code is of little consequence. What is really important to note and well to remember is the thought upon which the laws were so carefully based: "And ye shall be unto me a kingdom of priests, and an holy nation."

## CALENDAR OF EVENTS

### ► Tuesday, October 18 ◄

#### MARYLAND RADIOLOGICAL SOCIETY

Lord Baltimore Hotel  
5:30 P.M. Film Reading  
7:00 P.M. Dinner  
8:00 P.M. Scientific Paper

### ► Wednesday, October 19- Friday, October 21 ◄

#### MARYLAND NURSES ASSOCIATION

9:00 A.M.-5:00 P.M., Sheraton Belvedere Hotel,  
Baltimore, Md.

### ► Saturday, October 22 ◄

#### MEDICINE 1960

5:00 P.M. WMAR-TV

"The Retarded Child," a Panel Discussion  
Moderator

HARRY H. GORDON, M.D., National  
Association for Retarded Children

### ► Monday, October 24 ◄

#### ORTHOPAEDIC SECTION, B.C.M.S.

8:00 P.M.

The Johns Hopkins Hospital, New Auditorium

### ► Tuesday October 25 ◄

#### ANESTHESIA STUDY COMMITTEE

8:00 P.M., 1211 Cathedral Street

### ► Thursday, October 27- Friday, October 28 ◄

#### NORTHEASTERN TUBERCULOSIS CONFERENCE and

EASTERN SECTION, AMERICAN  
TRUDEAU SOCIETY  
(Joint Meeting)

9:00 A.M.-4:00 P.M., Emerson Hotel

### ► Saturday, November 5 ◄

#### HEART ASSOCIATION OF THE LOWER EASTERN SHORE, INC.

A Concise Cardiac Review

Johnny's and Sammy's, Salisbury, Md.

### ► Tuesday, November 8 ◄

#### MARYLAND SOCIETY ON ALCOHOLISM

Officers and Executive Committee

8:00 P.M. Council of Social Agencies,  
22 Light Street

### ► Wednesday, November 9 ◄

#### MARYLAND SOCIETY FOR MENTALLY RETARDED CHILDREN GREATER BALTIMORE CHAPTER

8:15 P.M., 2525 Kirk Avenue

### ► Monday, November 14 ◄

#### SACRED HEART HOSPITAL MEDICAL STAFF

11:30 A.M.

School of Nursing,  
Bellevue Street, Cumberland



# Maryland

## SOCIETY OF PATHOLOGISTS INC.

LOUIS B. THOMAS, M.D., *President*

EDWARD C. MCGARRY, M.D., *Secretary*

Suburban Hospital, Bethesda, Md.



## Detecting The Drunken Driver

A LAW AUTHORIZING the use of "... certain tests for the amount of alcohol in the defendant's blood in any criminal prosecution for a violation of the laws concerning driving or attempting to drive motor vehicles while under the influence of intoxicating liquor ..." was enacted June 1, 1959. Such tests may occasionally pose special problems for physicians in Maryland.

The analysis of the breath for its alcohol content, by means of the Breathalyzer, may be made by specially trained police officers. Withdrawal of a sample of blood to corroborate or refute the results of this test or, occasionally, to be done instead of the breath test must be done under the direction of a physician. The Maryland law (House Bill No. 132) reads as follows: "... (d) Only a physician, or qualified medical personnel, acting at the request of a police officer, or a person acting at the request of a physician, can withdraw blood for the purpose of determining the alcoholic content therein. This limitation does not apply to the taking of a breath test or a urine specimen. (e) The person tested shall be permitted to have a physician of his own choosing administer a chemical test in addition to the one administered at the direction of the police officer ..." If a blood specimen is withdrawn by a physician or under his direction, he must then make arrangements to have that blood analyzed for its alcohol content.

The results of this examination should be admissible as evidence for or against the charge of driving "under the influence" if the following precautions are taken: (1) advise the defendant that a specimen taken more than two hours after apprehension may not be admissible evidence; (2) require a written, signed, dated (with exact time of day noted), and witnessed request and authorization to draw the blood; (3) if not in possession of a container with sodium fluoride (10 ml. blood/100 mgm. dried NaF), for use as a preservative, use an appropriate vial from the supply the police will have; (4) use a skin disinfectant other than alcohol; and (5) maintain the "chain of evidence" by obtaining signed receipts for the specimen from anyone who handles the blood specimen.





# The Heart Page

Frank W. Davis, Jr., M.D. — Editor

A SERVICE OF

THE HEART ASSOCIATION OF MARYLAND

## CARDIAC RESUSCITATION WITHOUT THORACOTOMY

James R. Jude, M.D., W. B. Kouwenhoven, Eng.D., and  
G. Guy Knickerbocker, M.Sc. Eng.

**S**USTAINING OF LIFE requires, at the minimum, transportation and exchange of oxygen. Respiration and circulation may be halted abruptly by any of a great number of catastrophes. Either may precede the other; but the other ceases within a few seconds or minutes if one is not present. Commonly, when circulation ceases it is called cardiac arrest. Whether attempted resuscitation should be made depends on the etiology of the arrest and the possibility of an expected normal outcome. Thus the time factor between cessation of circulation and the onset of artificial or spontaneous circulation becomes important.

Presently executed methods of resuscitation from cardiac arrest include immediate artificial respiration, usually by mouth-to-mouth or direct endotracheal intubation, together with cardiac massage by open thoracotomy and direct manual intermittent compression of the heart. Artificial respiration can be given effectively and immediately by anyone, inside or outside of the hospital. Emergency thoracotomy, however, requires some consideration if it is to be employed by a non-surgeon or by a surgeon outside of the hospital environment. Time, equipment, personnel, and location all become factors in the problem.

A method of manual artificial circulation is now

available for use by anyone availing himself of its simple application.† Consisting of externally exerted rhythmic pressure on the lower third of the sternum, it is based upon the anatomic location of the heart between the sternum and the thoracic vertebrae. In the patient of any age, relaxed by the anesthesia of cardiac arrest, the thoracic cage becomes flexible, and the lower sternum is readily depressed several centimeters toward the spine. The heart, restricted from lateral movement by the pericardium and great vessels, is compressed by this maneuver. Alternate cardiac emptying and filling, 60 to 80 times a minute, together with valvular function provide forward circulation. The exact placement of the hands with pressure exerted by way of the heel of the lower hand on the sternum is most important to prevent unnecessary rib fracture. Even when this occasionally has occurred, it has been of no great consequence.

Experimental studies in dogs have shown that carotid arterial flow of 40 to 60 per cent of normal is maintained by external cardiac compression during ventricular fibrillation. Mean femoral arterial pressure is similarly maintained.

Application of external cardiac massage has been made on 47 patients undergoing 57 cardiac arrests at The Johns Hopkins Hospital. These cases consisted of arrest of circulation due not only to the usual operating room type secondary to anesthesia, hypoxia, or vago-vagal stimulation but also following cardiac surgery, myocar-

From the Department of Surgery, The Johns Hopkins University School of Medicine and Hospital, Baltimore, Maryland.

†Kouwenhoven, W. B., J. R. Jude, and G. G. Knickerbocker: Closed Chest Cardiac Massage. J.A.M.A. 173: 1064-1067, 1969.





This illustration shows the method of positioning of the hands and application of external pressure for closed chest cardiac massage.

dial infarction, and terminally in a large number of severely ill medical patients. Circulatory arrest was determined by sudden disappearance of blood pressure, pulse, heartbeat, and respiration. In each case, the chest would have been opened and direct massage instituted under proper circumstances and without the availability of the presently employed external method. In each case where inadequate ventilation might have been the cause, artificial respiration alone was first briefly attempted. Of the 57 circulatory arrests 41 (72 per cent) were resuscitated to their pre-arrest central nervous system status. Their permanent survival depended upon their primary disease process. The method was employed on patients ranging in age from two months to 82 years.

Blood pressure and electrocardiographic monitoring were available in a number of patients. Femoral pressures of 80 to 125 mm. Hg. were readily developed. It was found that the patient should be on a firm surface, such as the operating table, a stretcher, bed boards, or the floor. A rate of 60-80 compressions per minute provided the best sustained circulation. Femoral pulses were usually readily palpable. Dilated pupils

would constrict, and spontaneous respiration frequently recurred.

Artificial respiration must be given in every instance, if at all possible. Since the etiology of the arrest might be insufficient oxygenation, this must be remedied first. The small exchange of air in the presence of a patent airway resulting from the external trans-sternal cardiac compression will not be sufficient in these cases. Where respiratory arrest is secondary, spontaneous respiration will probably resume with resumption of circulation by artificial means.

Immediate resumption of circulation and respiration in cardiac arrest may now be employed without delay for specific personnel and material. The initial steps can thereby be made for the resuscitation of patients from circulatory arrest due to any cause. Of special value is the use of this method for continuing circulation following ventricular fibrillation secondary to acute myocardial infarction while steps are being made for external defibrillation. Value has also been found for its use in providing temporarily enhanced circulation during severe, sudden hypotension from certain cardiac arrhythmias.



## THE MARYLAND ACADEMY OF GENERAL PRACTICE

(A constituent chapter of the American Academy of General Practice)

**President:**

WALTER A. ANDERSON, M.D.  
Baltimore, Md.

**Vice Presidents:**

GEORGE A. MOULTON, JR., M.D.

Westminster, Md.

PAGE C. JETT, M.D.

Prince Frederick, Md.

Mrs. J. NELSON MCKAY

Baltimore, Md.

**DONALD F. BARTLEY, M.D.**

Essex, Md.

**President-elect:**

ANDREW C. MITCHELL, M.D.

Salisbury, Md.

**Treasurer:**

HARRY L. KNIPP, M.D.

4116 Edmondson Avenue

Baltimore 29, Md.

**Secretary:**

CHARLES F. CRIMY, M.D.

3723 E. Monument Street

Baltimore 5, Md.

**Executive Secretary:**

MR. WILLIAM J. WISCOFF

3723 E. Greenmount Ave.

Baltimore 19, Md.



### CURRENT TOPICS IN CARDIOVASCULAR MEDICINE a Symposium

The Maryland Academy of General Practice, in cooperation with the District of Columbia General Hospital, will present a Symposium in CURRENT TOPICS IN CARDIOVASCULAR MEDICINE, to be held at the Mayflower Hotel in Washington, D. C., on Thursday, November 3, 1960, from 9:00 A.M. to 5:00 P.M.

All physicians in Maryland are cordially invited to attend this symposium. There will be no registration fee. A complete program will be mailed later, containing an RSVP card for those who wish to attend the luncheon. A tentative program for this symposium is as follows:

#### Morning Session

**8:30 Registration**

**Chairman:** John D. Schultz, M.D., Medical Director D.C. General Hospital

**9:00 PHARMACOLOGY AND PHYSIOLOGY OF AMINE OXIDASE INHIBITORS**

Alfred Pletscher, M.D., Ph.D., Basle, Switzerland

**DISCUSSION**

Theodore Koppanyi, M.D., Professor of Pharmacology, Georgetown Medical School, Washington, D. C.

**9:45 PANEL DISCUSSION ON CLINICAL APPLICATION OF AMINE OXIDASE INHIBITORS IN ANGINA PECTORIS AND HYPERTENSION**

**Moderator:** Henry I. Russek, M.D., Consultant in Cardiovascular Disease, U.S.P.H.S. Hospital, Staten Island, N. Y.

**Panel:** Frank Finnerty, M.D., Assistant Professor of Medicine & Pharmacology, Georgetown Medical School, Washington, D. C.

Marvin Moser, M.D., Adjunct Physician in Medicine, Montefiore Hospital, New York, N. Y.

Robert Oblath, M.D., Associate Clinical Professor of Medicine, University of Southern California Medical School, Los Angeles, Calif.

Andrew Prandoni, M.D., Associate Professor of Clinical Medicine, George Washington Medical School, Washington, D. C.

**11:15 PANEL DISCUSSION ON USE OF ENZYMES IN THE DIAGNOSES OF HEART DISEASE**

**Moderator:** Howard Ticktin, M.D., Associate in Medicine, George Washington Medical School, Washington, D. C.

Panel: Warren Wacker, M.D., Associate in Medicine, Harvard Medical School, Boston, Mass.

Felix Wroblewski, M.D., Assistant Professor of Clinical Medicine, Cornell Medical School, New York, N. Y.

12:15 LUNCHEON—East Room

#### Afternoon Session

Chairman: J. B. Johnson, M.D., Professor of Medicine, Howard University, Washington, D. C.

2:00 HEREDITARY ASPECTS OF CARDIOVASCULAR DISEASE

Victor McKusick, M.D., Professor of Medicine, Johns Hopkins University Medical School, Baltimore, Md.

2:45 TAKING PRECORDIAL EKG'S DURING EXERCISE

John La Due, M.D., Ph.D., Associate Professor of Clinical Medicine, Cornell University Medical School, New York, N. Y.

3:30 PANEL DISCUSSION ON TREATMENT OF CARDIAC ARRHYTHMIAS

Moderator: John Evans, M.D., Associate Professor of Medicine, George Washington Medical School, Washington, D. C.

Panel: Proctor Harvey, M.D., Associate Professor of Medicine, Georgetown Medical School, Washington, D. C.

Robert Green, M.D., Instructor in Medicine, University of Cincinnati Medical School, Cincinnati, Ohio

William Likoff, M.D., Associate Professor of Medicine, Hahnemann Medical School, Philadelphia, Pa.

Robert Moe, Ph.D., Department of Pharmacology, Hoffmann-LaRoche, Inc., Nutley, N. J.

5:30 RECEPTION—Williamsburg Room

#### Medical Seminar Cruise

The Duke University Medical School is sponsoring a postgraduate Medical Seminar Cruise to the West Indies this fall aboard the new KUNGSHOLM, Sweden's largest transatlantic liner and cruise ship. The luxury ship, which will sail from New York City on November 9, will visit the Virgin Islands and San Juan, Puerto Rico, and will return to New York on November 18.

Shipboard lectures on various subjects in medicine, pediatrics, and surgery will be given by the following members of the Duke Medical School faculty: Edwin P. Alyea, M.D., professor of urology; Doris Ahlee Howell, M.D., associate professor of pediatrics and pediatric hematologist; Elbert L. Persons, M.D., professor of medicine; William M. Shingleton, M.D., professor of surgery; and William M. Nicholson, M.D., professor of medicine and assistant dean for post-graduate medical education.

The instructional program will provide 20 hours credit toward postgraduate requirements of the American Academy of General Practice. While designed primarily for generalists, the program should be of value and interest to specialists. Informal panel discussions, clinico-pathological conferences, and formal presentations will be given by members of the faculty. We hope that physicians from Maryland will join us on our trip to the West Indies.

W. M. Nicholson, M.D.

Assistant Dean for Postgraduate Medical Education  
Duke University Medical Center  
Durham, North Carolina





## BALTIMORE CITY HEALTH DEPARTMENT

HUNTINGTON WILLIAMS, M.D.  
COMMISSIONER

P. O. Box 1677 Baltimore 3, Md.

Plaza 2-2000: Extension 307

Learn To Do Your Part In The Prevention Of Disease

### Dental Dividends From Fluoridation

**I**N HIS *Saturday Letter to the Mayor* on August 5, the Commissioner of Health wrote in regard to results from the fluoridation of the Baltimore City water supply as follows:

"By all odds the most exciting public health event of the past week is related to Baltimore's pioneer control studies on the results of the fluoridation of the city water supply and the effects achieved on the prevention of dental decay. The report given in this letter, in my opinion, is tremendously important and confirms our confident expectations.

"Dr. H. Berton McCauley, Director of the City Health Department's Bureau of Dental Care, and Mr. Todd M. Frazier, Director of the Department's Bureau of Biostatistics, have just announced completion of the special dental survey of 2,139 Baltimore school children six, eight and ten years of age. Children in twenty public schools, representing a cross section of the city's school population at each age level, were examined by Dr. L. Paul Rivas of the Baltimore City Health Department dental staff.

"Designed to test the results of fluoridation of Baltimore's city water supply, begun in 1952 for the purpose of preventing dental decay, the survey has disclosed an important reduction in tooth decay experience since a similar baseline study was made in 1955. This 1960 survey shows that six-year-old children exposed to the fluoridated drinking water continuously from birth average 75 per cent fewer permanent teeth attacked by decay than youngsters of the same age five years ago; also that eight-year-old children have 50 per cent and ten-year-old children 30 per cent less decay than in 1955. These findings confirm numerous observations of the effects of fluoridation in other communities throughout the country where this public health measure has been adopted during recent years.

"Inasmuch as fluoridation was inaugurated in Baltimore November 26, 1952, there have been to now only seven full years of exposure to fluoridated water in this city. Obviously the children who are now eight and ten years old have not received the benefit of complete exposure to fluoridated drinking water throughout the period of development of their permanent teeth, whereas the six-year-old group have, thus explaining their greater decay reduction. In years to come, as individuals with complete developmental exposure are found in upper age levels of the population, a uniform maximum reduction of tooth decay comparable to that presently observed in the six-year-old group may be expected at all ages.

"Such an improvement in dental health among the younger citizens of Baltimore has far-reaching economic implications. In 1955, 50 per cent of all six-year-old children were found to have one or more decay-attacked permanent teeth. For those children who have had Baltimore's fluoridated drinking water since birth, only 20 per cent now have one or more decay-attacked permanent teeth. So, dental bills to parents are cut accordingly. The annual saving to Baltimore parents is now estimated at \$200,000 and increasing rapidly. Fluoridation, on the other hand, costs \$80,000 a year, and this cost is relatively constant. Moreover, similar savings extend far beyond the city's boundaries since hundreds of thousands of county residents in the surrounding areas are served by the Baltimore City water supply.

"The fluoridation program was begun after extensive hearings had been conducted by the Health Committee of the Baltimore City Council. During these it was evident that the leaders of the local, state and national medical and dental professions and the U. S. Public Health Service were entirely in accord with it. Their confidence has been justified."

*Huntington Williams, M.D.*

Commissioner of Health





# Woman's Auxiliary

## Medical and Chirurgical Faculty

MRS. E. RODERICK SHIPLEY Auxiliary Editor



OCTOBER, 1960

## MEET US IN ST. LOUIS SOUTHERN

### MEET US IN THE FALL

**T**HE THIRTY-SIXTH annual meeting of the Woman's Auxiliary to the Southern Medical Association will convene at the Statler-Hilton Hotel, St. Louis, Missouri, October 31 to November 3. Mrs. John M. Chenault will preside until she is succeeded by the president-elect, Mrs. Kalford W. Howard.

The schedule for the business sessions has been sent out to the board members and will be printed in the Southern Medical Journal, but the social part of the convention is equally as important. Several afternoon events have been planned to show to the convention guests some of the outstanding cultural attractions.

Monday's luncheon (October 31) will be preceded by a bus trip through suburban St. Louis to the new Bellerive Country Club. Special entertainment is promised after the luncheon.

The traditional past presidents' breakfast, in the Daniel Boone Room of the hotel, will be the eye-opener for Tuesday morning (November 1). The committee, Mrs. John J. O'Connell, Mrs. Robert C. Haynes, and Mrs. M. Pinson Neal, past presidents of both Southern and Missouri State Auxiliary, invite all of the past presidents of Southern to join them for breakfast and a bit of nostalgic reminiscing about "when I was president—."

Tuesday afternoon at 3:15, a tea and fashion show is being presented by Stix, Baer & Fuller

Department Store at its downtown location. Many lovely Christmas fashions will be shown.

The Doctor's Day award luncheon, to be held at the Statler-Hilton on Wednesday (November 2), is the highlight of the Auxiliary's activities. The entertainment will feature a "Serenade to Southern." This is the day your husband should be your special guest, the day he is being honored.

Another bus trip, arranged for Wednesday, will leave the hotel at 2 P.M. for a tour of the world famous Missouri Botanical Gardens and tea in the new national headquarters of the Garden Clubs of America.

Not a part of Southern's convention, but planned to coincide with the influx of Southern delegates and guests on Sunday, October 30, the St. Louis County Medical Society and its Auxiliary are having a cocktail, dinner, and show package called "Funsmoke," a comedy take-off on the current vogue for westerns.

**THE PLACE**—the intimate Boulevard Room of the Sheraton-Jefferson Hotel.

**THE TIME**—Sunday, October 30—cocktails, 6:30 p.m.; buffet supper, 7:30 p.m.

**THE FOOD**—Outstanding . . . delicious . . . with that special western tang.

**THE TALENT**—Completely wacky! Ask anyone who saw those Dancing Doctors put on "A Night in Paris" at the Missouri State Medical Convention last March.

THE PRICE—\$8.00 per person. This includes cocktail hour, buffet supper, floor show, tax, and gratuity.

THE CAUSE—Benefit of the St. Louis County Auxiliary's Nurse Scholarship Fund and the A.M.E.F.

Plan to arrive in St. Louis Sunday, October 30, before the dinner hour and enjoy some "real gone antics." Mail your check for tickets for this fabulous extravaganza, "Funsmoke," to Mrs. M. A. Diehr, 28 Dromara Road, St. Louis 24, Mo.

## DIRECTORY OF THE WOMAN'S AUXILIARY TO THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND

1960-61

### OFFICERS

#### *President*

Mrs. William S. Stone  
4202 Greenway, Baltimore 18

#### *Second Vice President*

Mrs. Archie Cohen  
Clear Spring

#### *Treasurer*

Mrs. Emil G. Bauersfeld  
3916 Virgilia St., Chevy Chase 15

#### *President-Elect*

Mrs. Norman Oliver  
1108 Woodside Pkwy., Silver Spring

#### *Third Vice President*

Mrs. Roger Windsor  
5701 Greenleaf Road, Baltimore 10

#### *Recording Secretary*

Mrs. Roy Skipton  
4910 41st Place, Hyattsville

#### *Parliamentarian*

Mrs. Albert E. Goldstein  
3505 N. Charles St., Baltimore 18

#### *First Vice President*

Mrs. Conrad B. Acton  
1208 St. Paul Street, Baltimore 2

#### *Fourth Vice President*

Mrs. G. Allen Moulton  
Ridge Road, Westminster

#### *Corresponding Secretary*

Mrs. John Grow  
1747 Circle Road, Ruxton 4

### COMMITTEE CHAIRMEN

#### *Membership*

Mrs. Norman Oliver  
1108 Woodside Pkwy., Silver Spring

#### *Revisions and Resolutions*

Mrs. D. Delmas Caples  
38 Chatsworth Ave., Reisterstown

#### *The Bulletin*

Mrs. Samuel R. Wells  
1018 Potomac Avenue, Hagerstown

#### *Newsletter*

Mrs. G. Allen Moulton  
Ridge Road, Westminster

#### *American Medical Education*

*Foundation*  
Mrs. Robert W. Garis  
The Ambassador, Baltimore 18

#### *Program*

Mrs. Archie Cohen  
Clear Spring

#### *Doctor's Day*

Mrs. Irvin L. Wachsmann  
Union Avenue, Havre de Grace

#### *Press and Publicity*

Mrs. Robert A. Reiter  
701 Dryden Avenue, Baltimore 29

#### *Hospitality*

Mrs. Ross Z. Pierpont  
5408 Purlington Way, Baltimore 12

Mrs. Charles H. Williams

1632 Reistertown Road, Pikesville 8

#### *Finance*

Mrs. Page Jett  
Prince Frederick

#### *Community Service*

Mrs. Roger Windsor  
5701 Greenleaf Road, Baltimore 10

#### *Auxiliary Editor, (Maryland State Medical Journal)*

Mrs. E. Roderick Shipley  
Box 80A, Ridge Road, Hanover

#### *Mental Health*

Mrs. Morrell Mastin  
Sykesville

#### *Civil Defense*

Mrs. Louis Z. Dalmau

713 Milford Mill Road, Pikesville 8

#### *Safety*

Mrs. Stuart D. P. Sunday  
6404 N. Charles St., Baltimore 12

#### *Members At Large*

Mrs. John E. Baybutt  
205 Earle Avenue, Easton

#### *Recruitment*

Mrs. John O. Robben—Chairman  
3709 Calvend Lane, Kensington

Mrs. A. J. Mirkin—Western  
Counties  
223 Schley Street, Cumberland

Mrs. William D. Lynn—Central  
Counties  
5002 St. Albans Way, Baltimore 12

#### *Key and State Legislation*

Mrs. Leo Brady  
707 Hampton Lane, Towson 4

#### *Historian*

Mrs. Conrad Acton  
1208 St. Paul Street, Baltimore 2

#### *Convention Arrangements*

Mrs. William S. Stone  
4202 Greenway, Baltimore 18

#### *Student A.M.A.*

Mrs. Albert E. Goldstein  
3505 N. Charles St., Baltimore 18

#### *Councilor to Southern Medical Association*

Mrs. Charles H. Williams  
1632 Reisterstown Rd., Pikesville 8

### OFFICERS OF COUNTY AUXILIARIES

#### **Allegany-Garrett County**

##### *President*

Mrs. Thomas F. Lewis  
71 La Vale Court, La Vale

##### *Vice President*

Mrs. E. I. Baumgartner  
134 Second Street, Oakland

##### *Secretary*

Mrs. Overton Himmelwright  
Box 2257, Station #8, Cumberland

##### *Treasurer*

Mrs. Ralph Reiter  
828 Buckingham Road, Cumberland

(Term of office ends October, 1960)

#### **Baltimore City**

##### *President*

Mrs. Raymond V. Rangle  
3808 St. Paul Street—18

##### *President-Elect*

Mrs. Robert W. Garis  
Ambassador Apts.—18

##### *First Vice President*

Mrs. Stuart D. P. Sunday  
6404 N. Charles Street—12

##### *Second Vice President*

Mrs. Robert A. Reiter  
701 Dryden Drive—29

##### *Treasurer*

Mrs. Sullins G. Sullivan  
419 Oak Lane—4

##### *Recording Secretary*

Mrs. Otto C. Brantigan  
3<sup>rd</sup> Paddington Court—12

##### *Corresponding Secretary*

Mrs. John L. Grow  
1747 Circle Road, Ruxton—4

##### *Parliamentarian*

Mrs. E. Roderick Shipley  
Box 80A, Ridge Road, Hanover

#### **Baltimore County**

##### *President*

Mrs. Walter M. Hammett  
Baldwin

##### *Vice President*

Mrs. Richard Von Rigler  
1 West Overlea Avenue—6

##### *Corresponding Secretary*

Mrs. Charles H. Williams  
1632 Reisterstown Rd., Pikesville—8

##### *Recording Secretary*

Mrs. William Roemmich  
Field Road, Pikesville—8

##### *Treasurer*

Mrs. Raymond Cunningham  
4101 N. Charles Street—18

## VOTE

This is an important year for medicine, politically speaking. The proposed legislation providing medical care for the needy aged has passed both the House and the Senate and was signed by the President on September 13. This bill was amended from a proposed blanket coverage for everyone under Social Security to one that benefits only the indigent and needy aged population. It also made provision for the states to assume their share of the cost and administration, which action is in line with the ideas voiced by the American Medical Association and veers from the threat of socialized medicine that has long been a concern to us. Many more bills of medical significance will be introduced to Congress this year. It is up to all of us to keep informed and to vote for the candidate who best cooperates with our own views.

## VOTE

## Carroll County

### *President*

Mrs. Julius Chepko  
85 W. Green Street, Westminster

### *Vice President*

Mrs. Howard Hall  
Sykesville

### *Recording Secretary*

Mrs. Merritt Robertson  
New Windsor

### *Corresponding Secretary*

Mrs. Yosuo Takahashi  
Sykesville

### *Treasurer*

Mrs. J. H. Caricofe  
Union Bridge

## Harford County

### *President*

Mrs. Edward Loo  
Chesapeake Drive, Havre de Grace

### *Vice President*

Mrs. Philip Heuman  
Hickory Avenue, Bel Air

### *Secretary*

Mrs. Wallace Sadowsky  
Perryville

### *Treasurer*

Mrs. Irvin Wachsman  
407 S. Union Ave., Havre de Grace

## Montgomery County

### *President*

Mrs. George R. Spence  
1515 Highland Drive, Silver Spring

### *President-Elect*

Mrs. Henry P. Laughlin  
4101 Stanford Street, Bethesda

### *Vice President*

Mrs. John B. Brady  
9016 Alton Parkway, Silver Spring

### *Recording Secretary*

Mrs. Gordon Smith  
Barnesville

### *Corresponding Secretary*

Mrs. Granville B. Queen  
Springbrook

### *Treasurer*

Mrs. John Haberman  
10615 Georgia Ave., Silver Spring

## Prince George's County

### *President*

Mrs. John Perkins  
2713 Belleview Avenue, Cheverly

### *Vice President*

Mrs. Norman Comeau  
5711 Euclid Street, Cheverly

### *Corresponding Secretary*

Mrs. William Dixon  
3101 Tremont Avenue, Cheverly

### *Recording Secretary*

Mrs. Harry Ferris  
4323 Van Buren Street, Hyattsville

### *Treasurer*

Mrs. Charles Connor  
6111 Montrose Road, Cheverly

## Washington County

### *President*

Mrs. Archie R. Cohen  
Clear Spring

### *President-Elect (First Vice President)*

Mrs. Richard Binford  
1319 Oak Hill Avenue, Hagerstown

### *Second Vice President*

Mrs. David Boyer  
1552 Dual Highway, Hagerstown

### *Recording Secretary*

Mrs. Hugo Sacchet  
2263 Briarcliff Drive, Hagerstown

### *Corresponding Secretary*

Mrs. George Jennings  
3 Englewood Road, Hagerstown

### *Treasurer*

Mrs. Edward W. Ditto III  
625 Orchard Road, Hagerstown

### *Parliamentarian*

Mrs. John H. Hornbaker  
1117 Oak Hill Avenue, Hagerstown